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THE

CYCLOPÆDIA;

OR,

Universal Dictionary

OF

ARTS, SCIENCES, AND LITERATURE.

PLATES. VOL. II.

BASSO RELIEVO — HOROLOGY.

Printed by A. Strahan,
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THE

CYCLOPÆDIA;

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OF

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BY

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WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS,

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PLATES. VOL. II.

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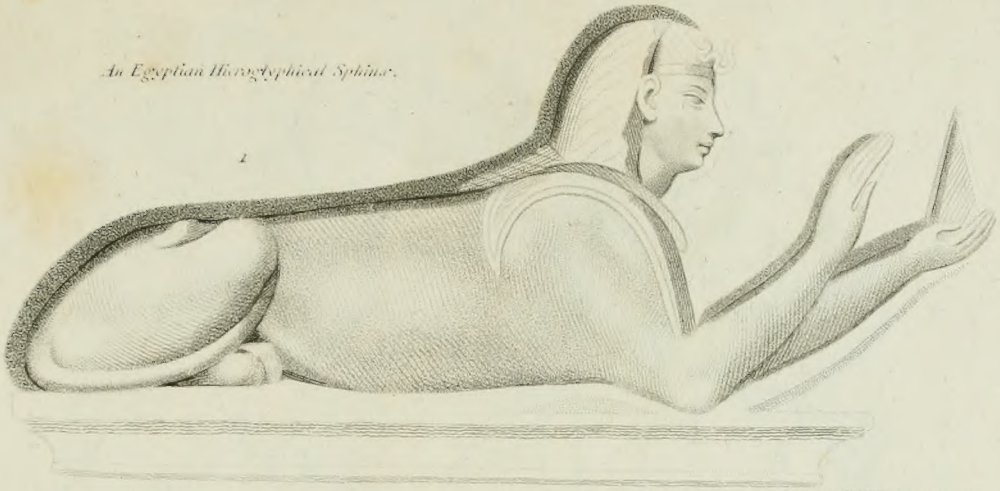
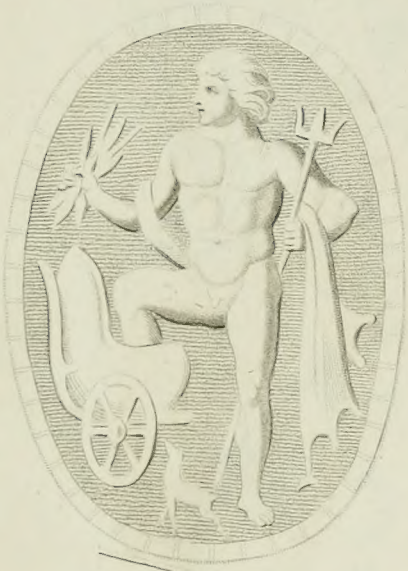
An Egyptian Hieroglyphical Sphinx.

1





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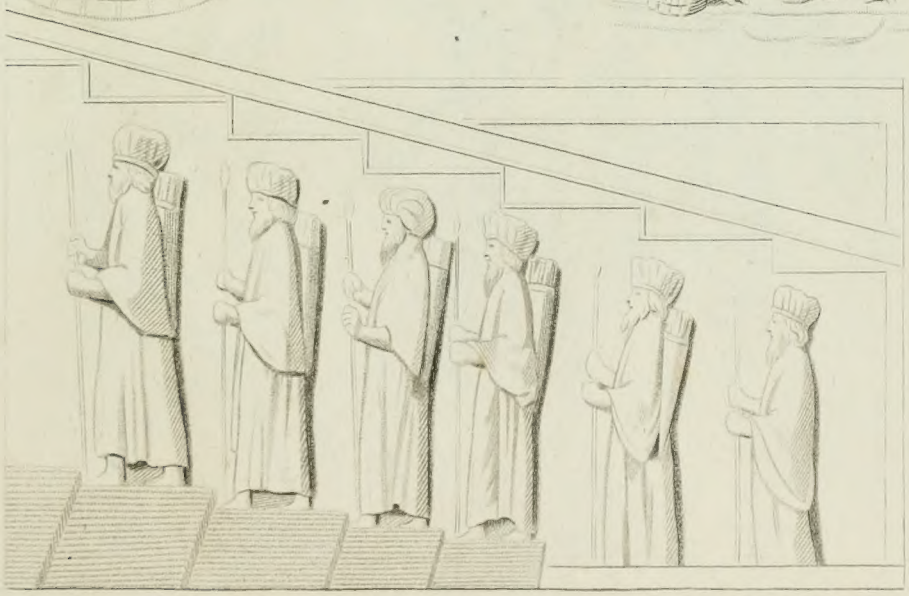
2

Hindu Basso Relievo — British Museum.



3

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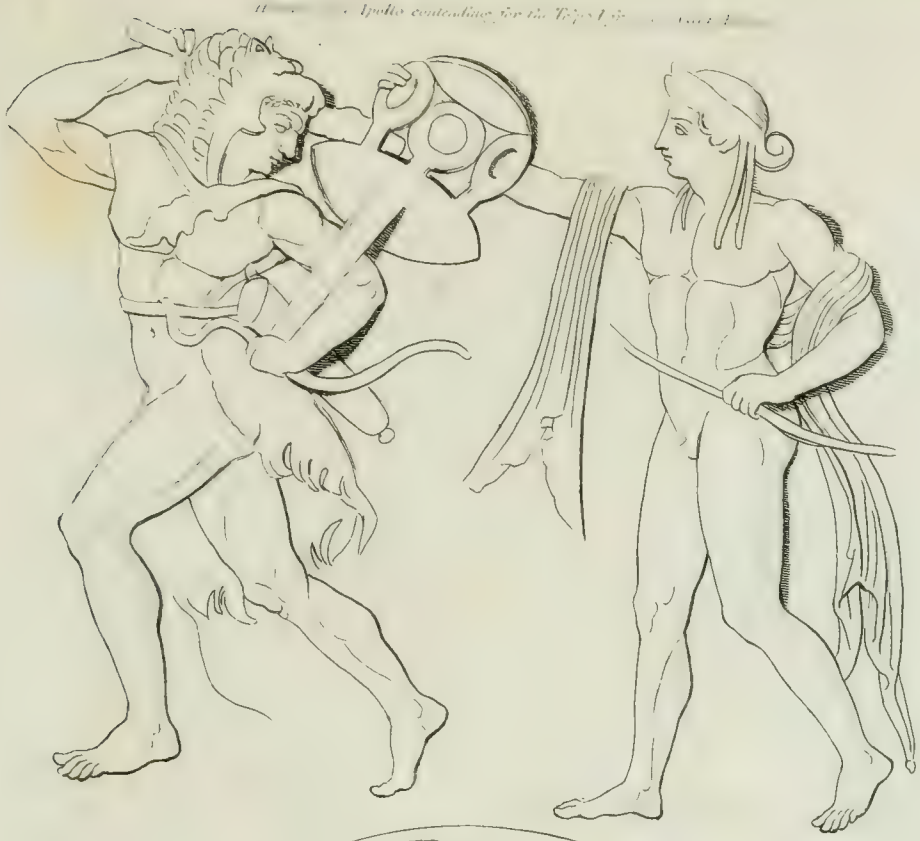
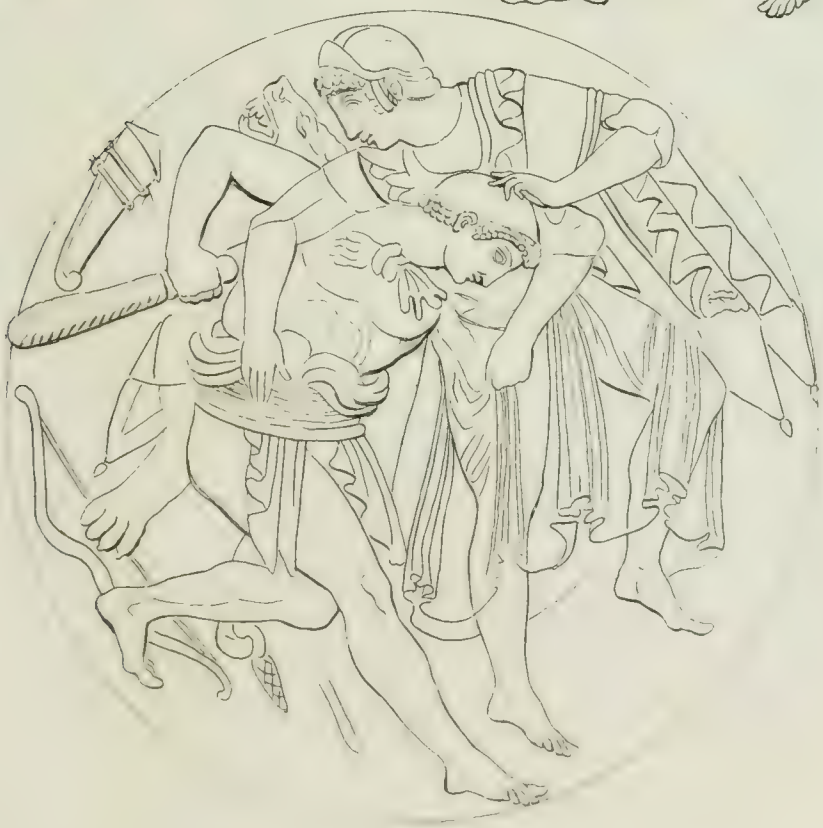
BASSO RELIEVO.

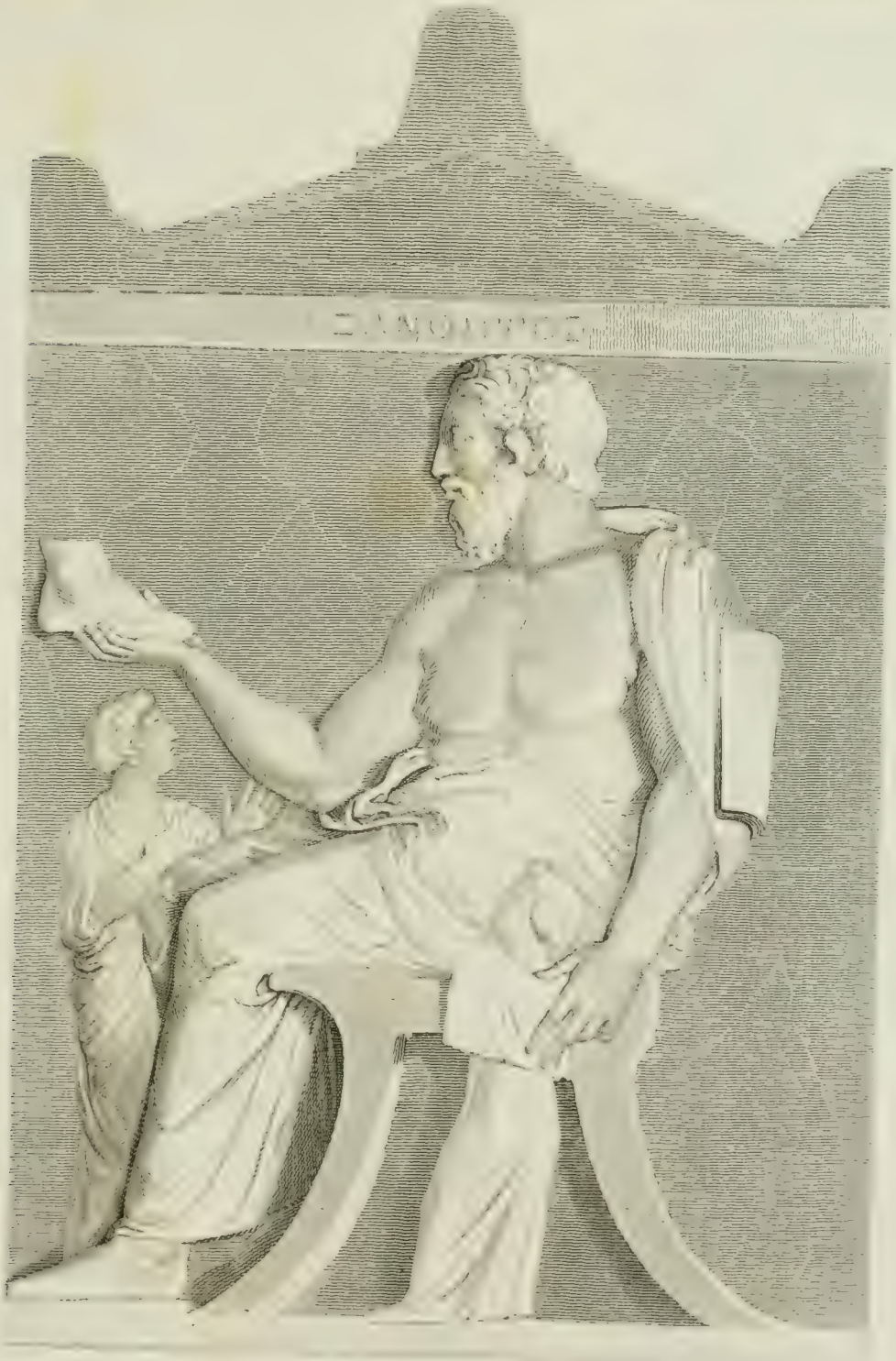
[illegible] Apollo contending for the Tripod [illegible]

PLATE II





THE TOMB STONE OF XANTHIPPUS FATHER OF PERICLES.



Brought from Athens by Dr. Askew
In the Possession of Charles Townley Esq.r

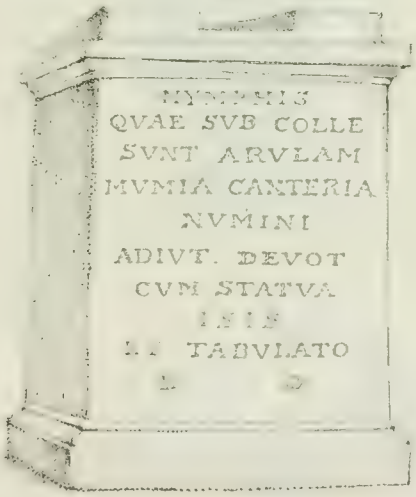
Drawn by J. Flaxman R.A. *Published as the Act directs, Jan.y 2.d 1809, by Longman & Rees, Paternoster Row.* *Engraved by J. Parker*

BASSO RELIEVO.

PAGAN ALTARS.

Fig. 1. — Basso-relievo round a Capital in the Cathedral of Carrara.

Altars — N°2.



Altars — N°1

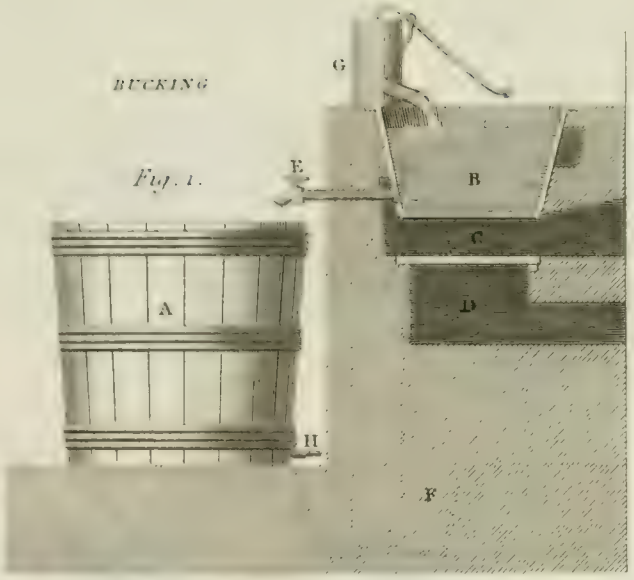
Fig. 2. — Basso-relievo of Lethus, Antiope & Amphion.

Published by Longman Hurst Rees Orme & Brown London Novem.r 1.st 1818.

BLEACHING.

BUCKING

Fig. 1.



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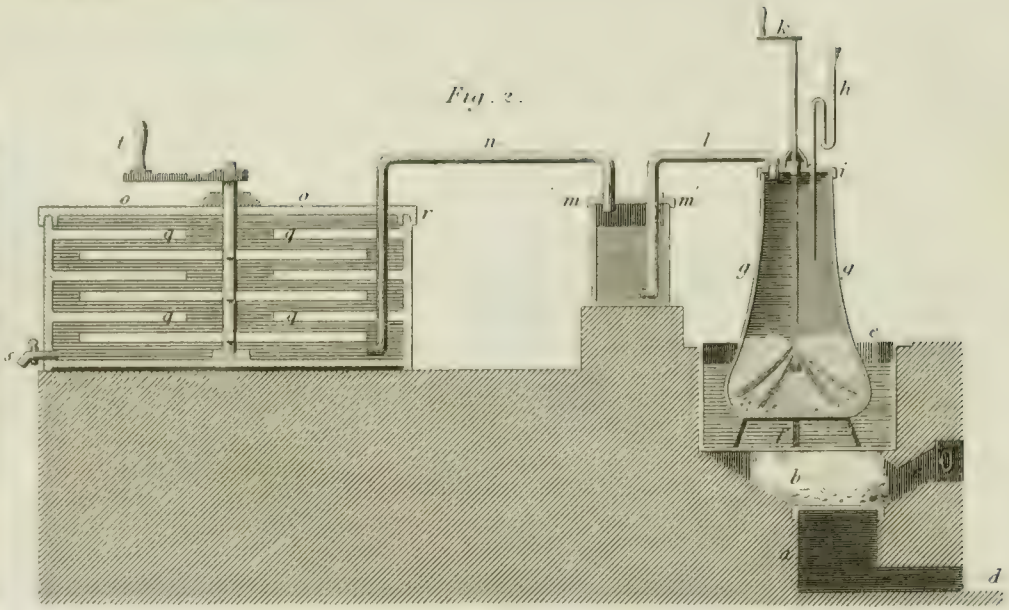
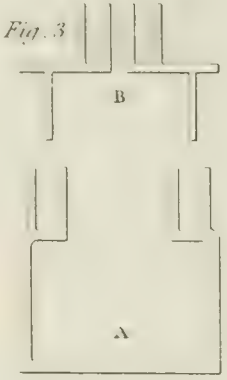


OXI-MURIATIC ACID

Fig. 3



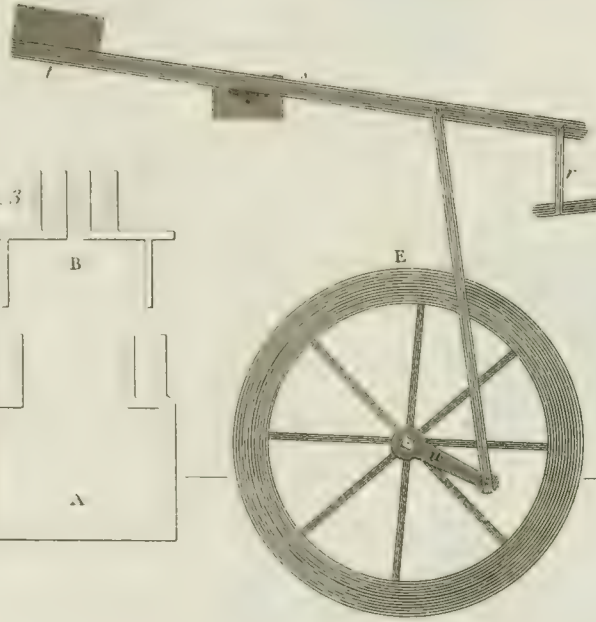
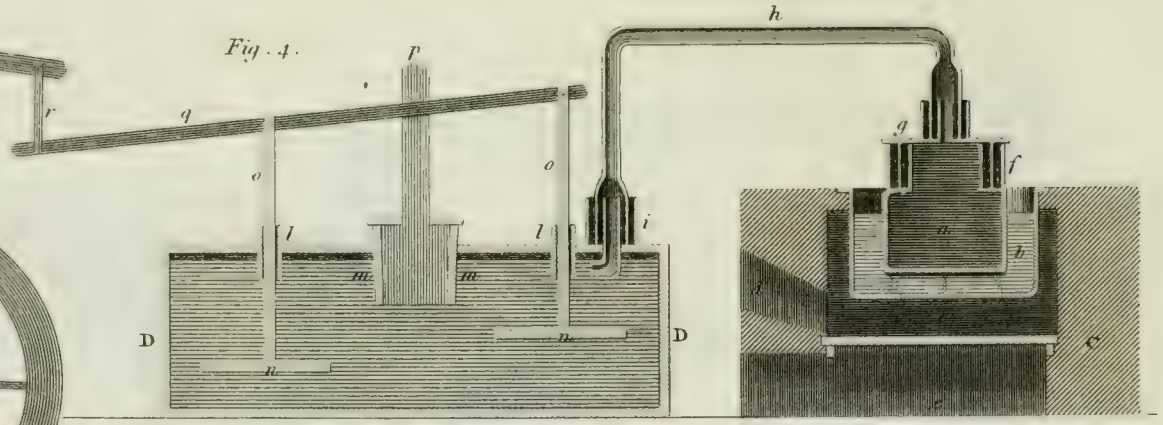


Fig. 4.



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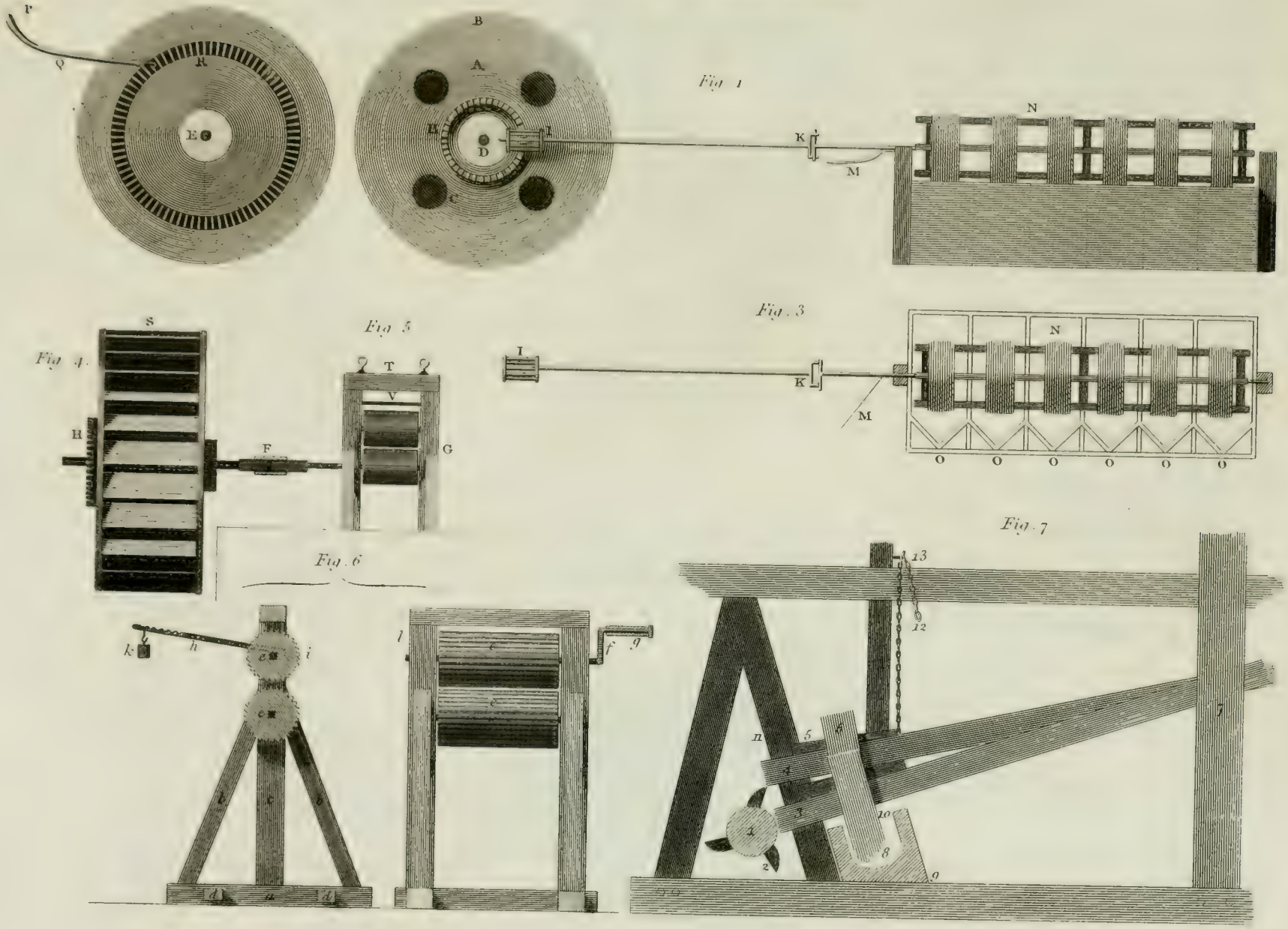
BLEACHING.

WASHING & CLEARING.



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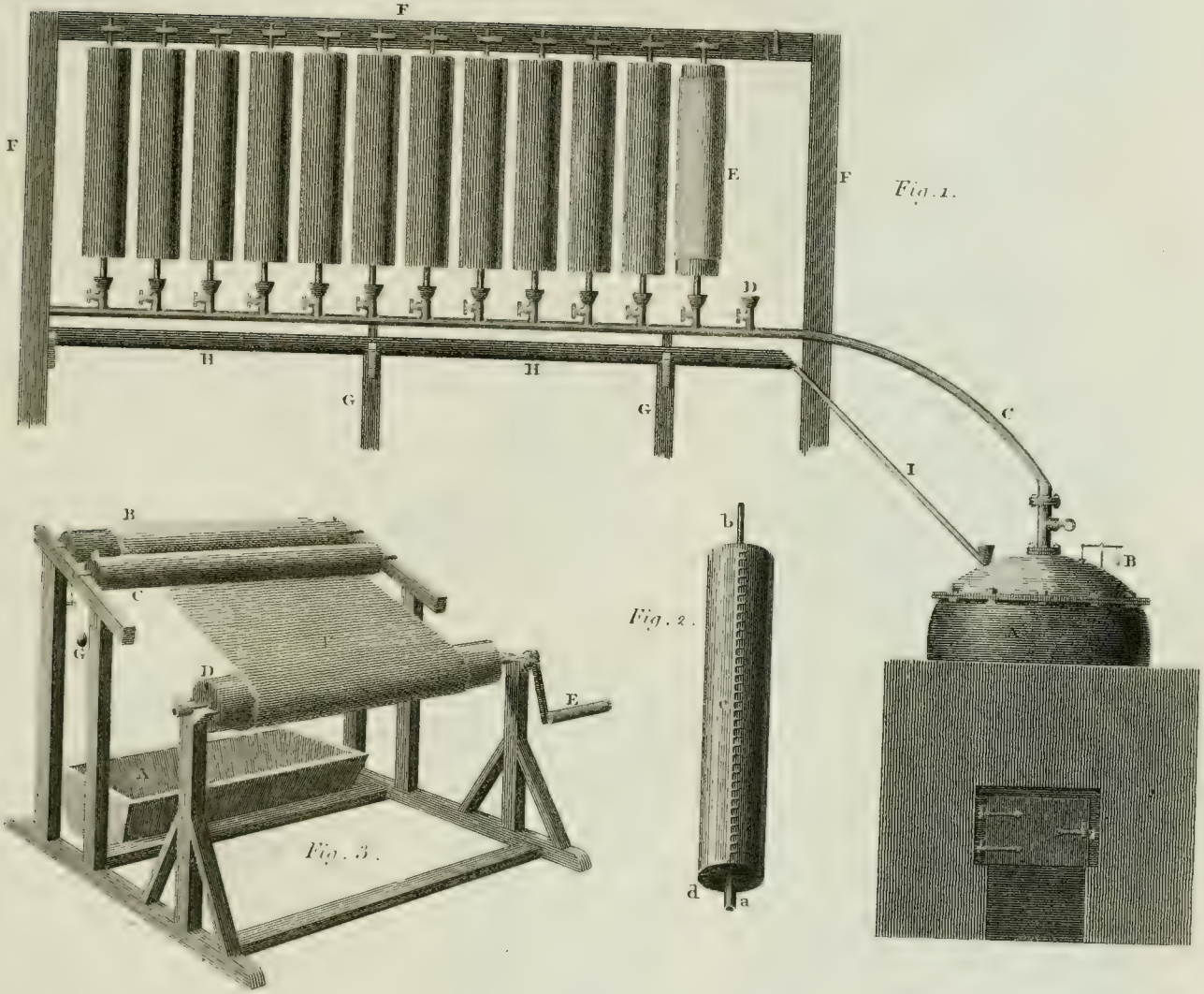
DRYING.



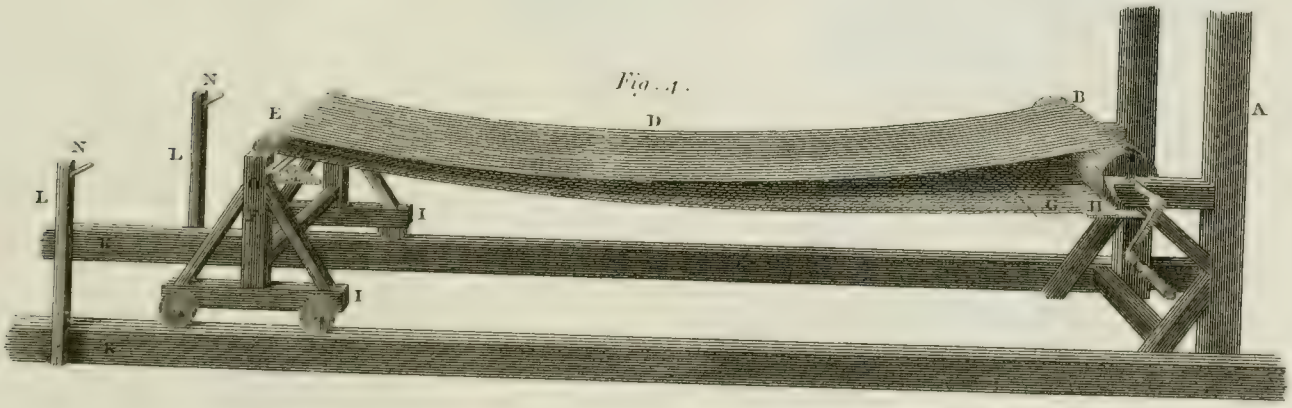


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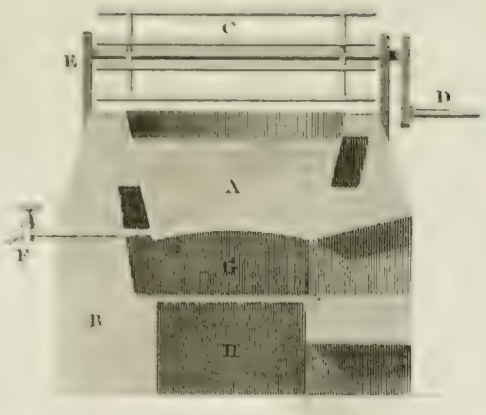
Fig. 1



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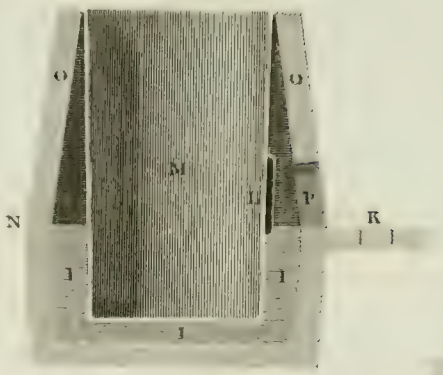


Fig. 3.

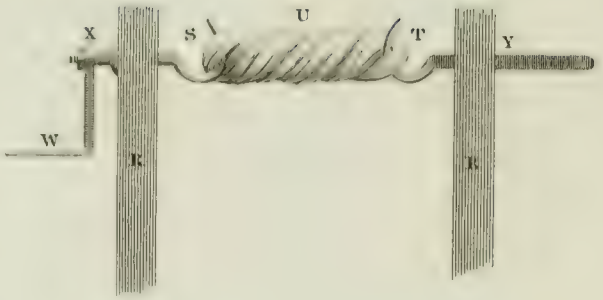
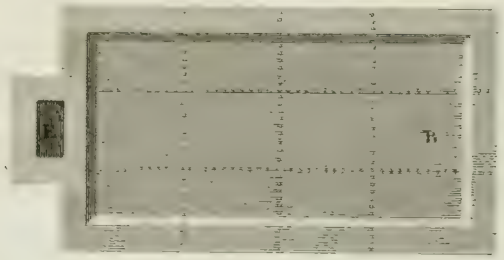


Fig. 5.



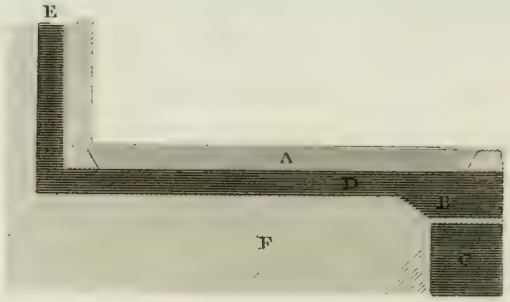
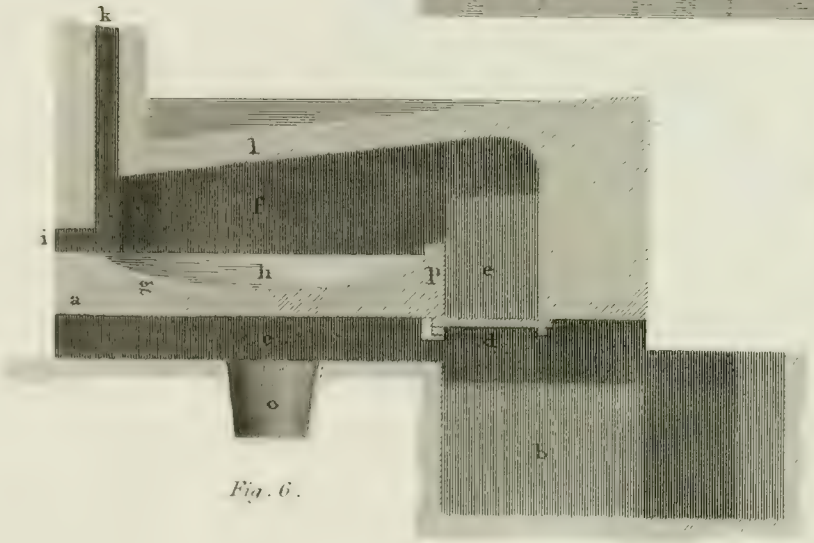


Fig. 4.



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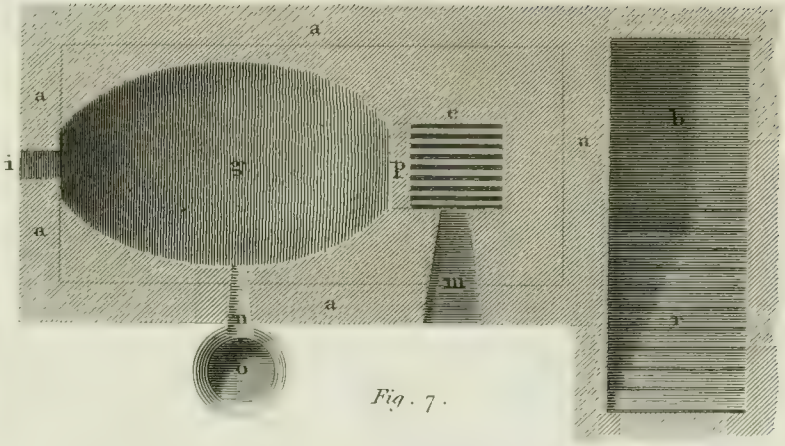

Fig. 7.

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MACHINERY.

BLOCK MACHINERY at PORTSMOUTH.

Sawing Machine.

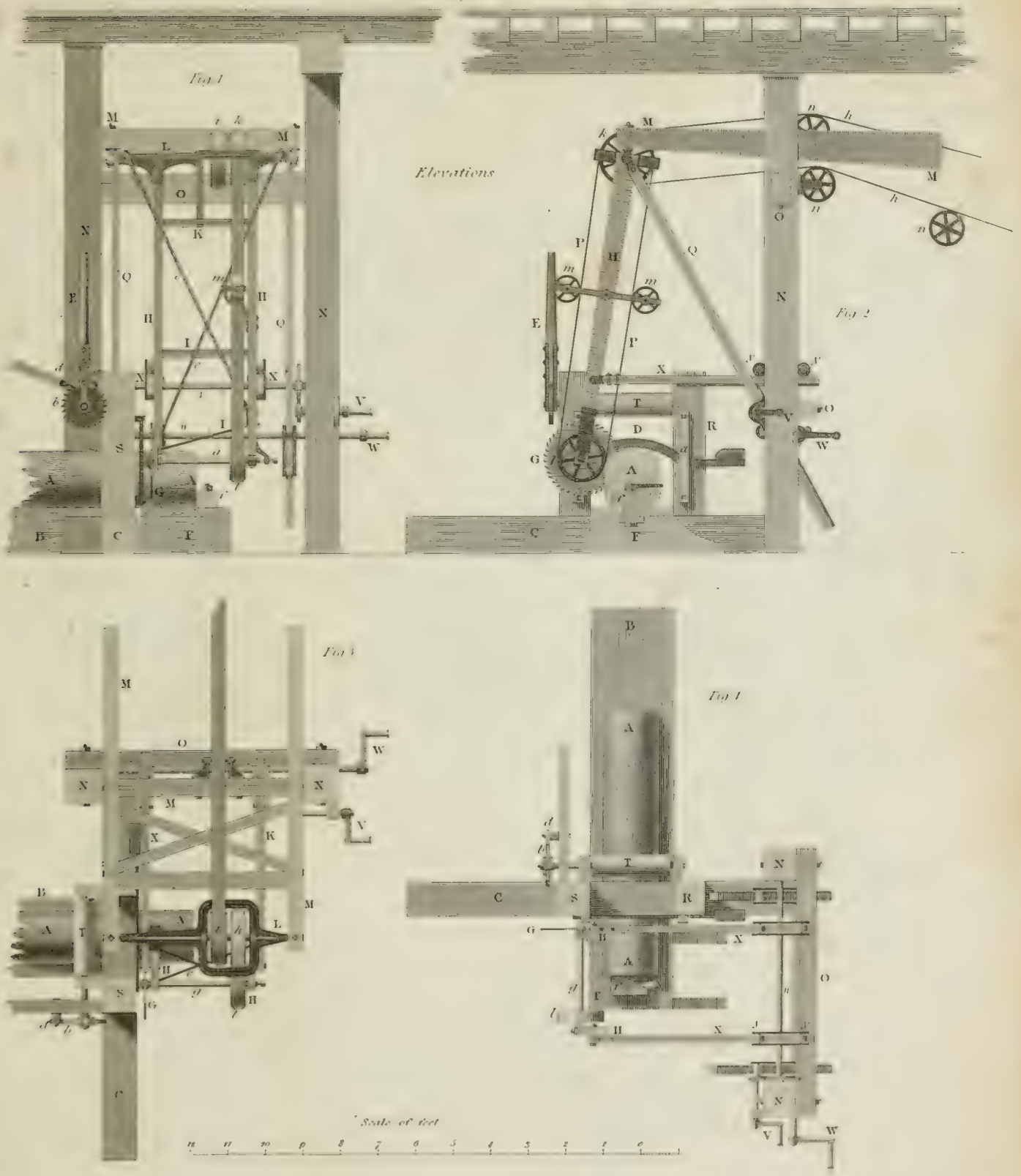

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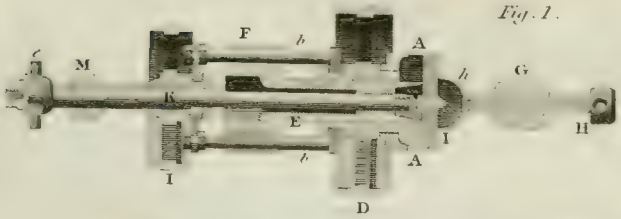
Fig. 1.



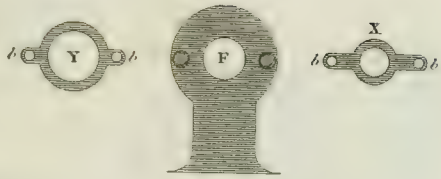
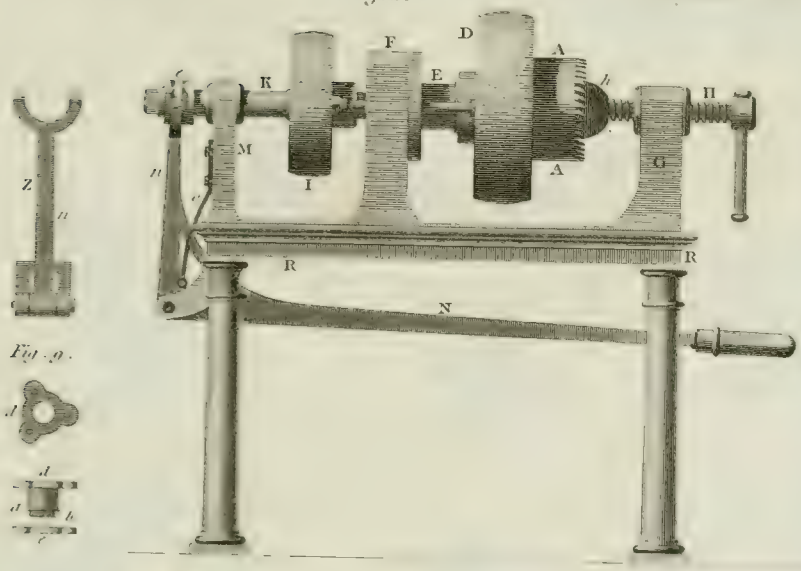


Fig. 2.

Crown Saw.

Fig. 3.



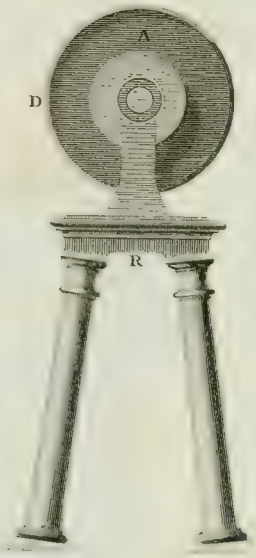


Fig. 9.

Fig. 4.

PLATE B.

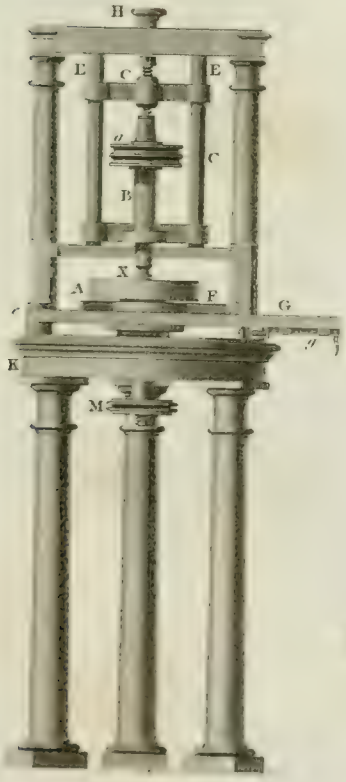


Fig. 6.

Coaking Engine.

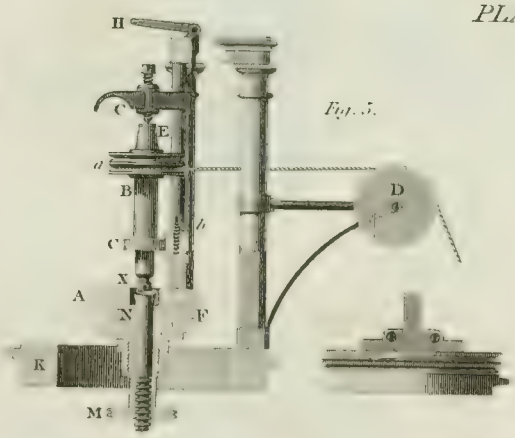


Fig. 5.

Fig. 8.

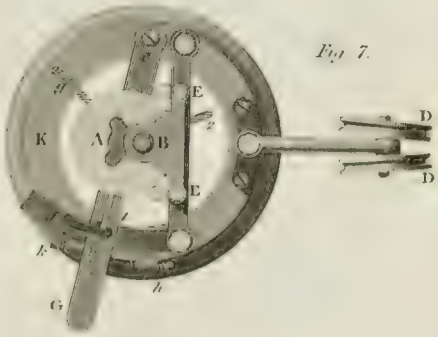


Fig. 7.

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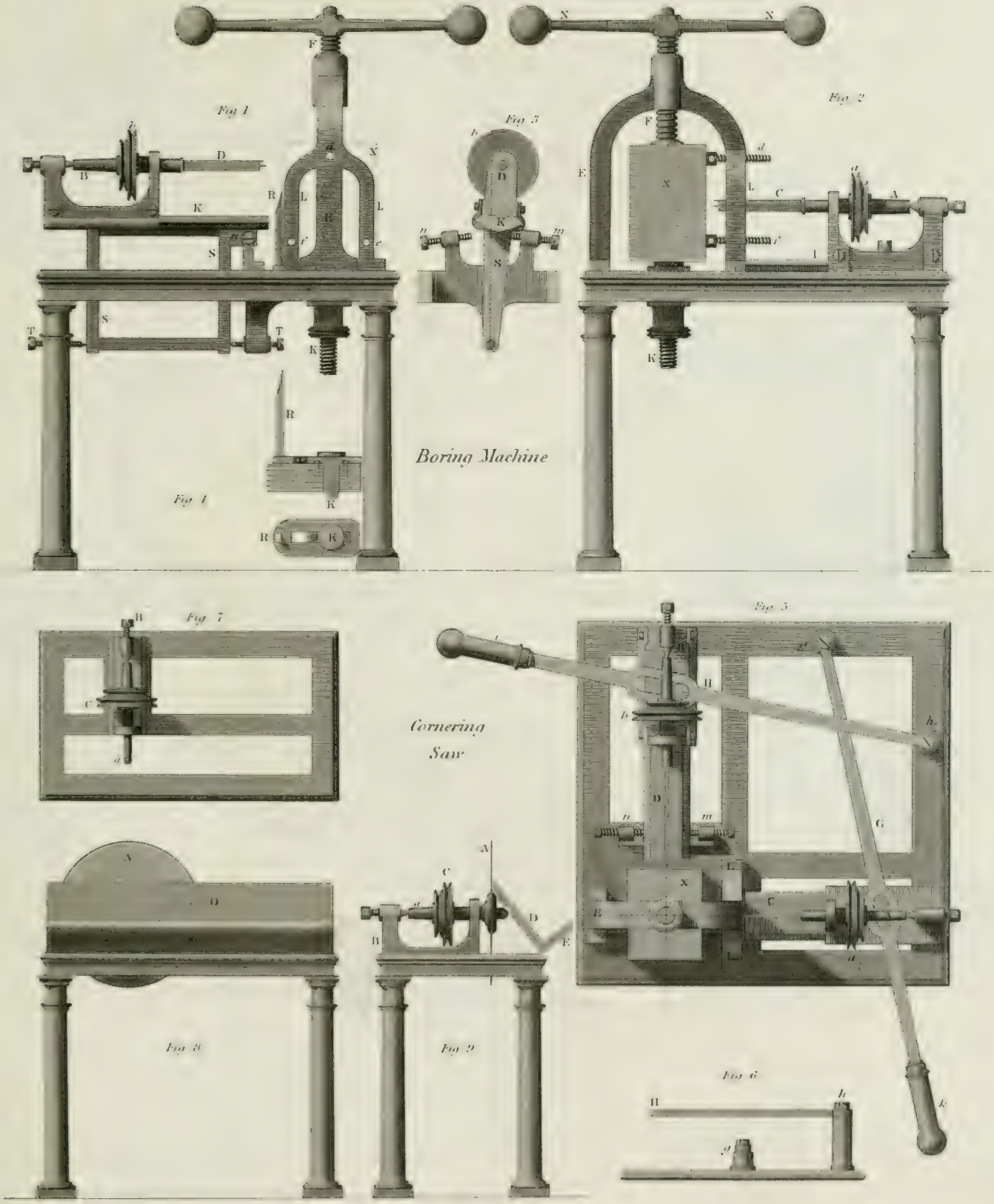
Lowry Sc.



J Varey del. Published as the Act directs 1813, by Longman Hurst, Rees, Orme, & Brown, Paternoster Row Lowry Sculp.

BLOCK MACHINERY AT PORTSMOUTH.

Fig. 1.

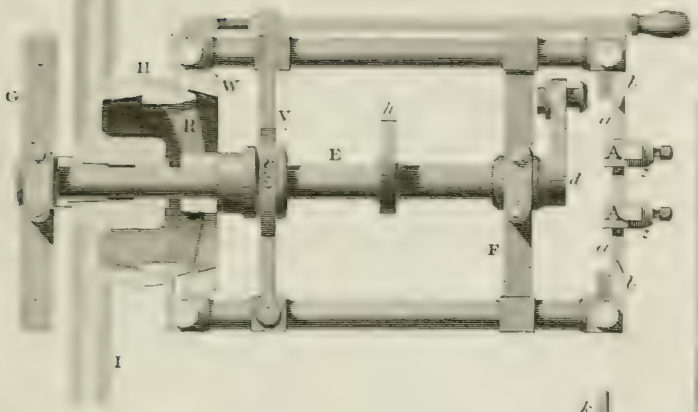
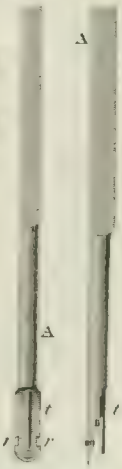


Fig. 6.

Mortising Machine.



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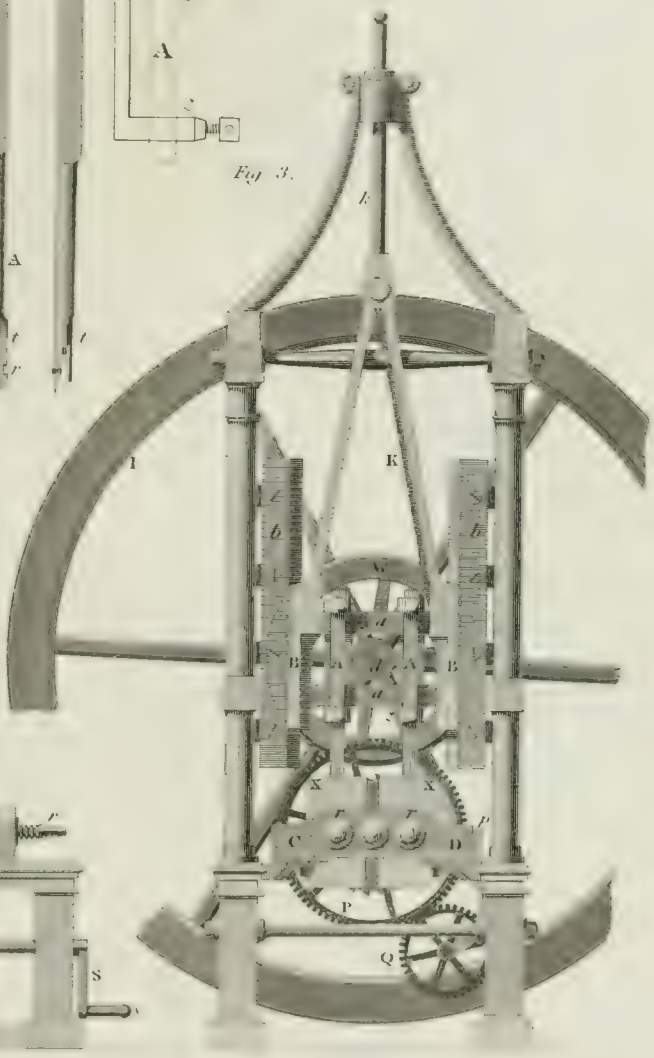

Fig 2.

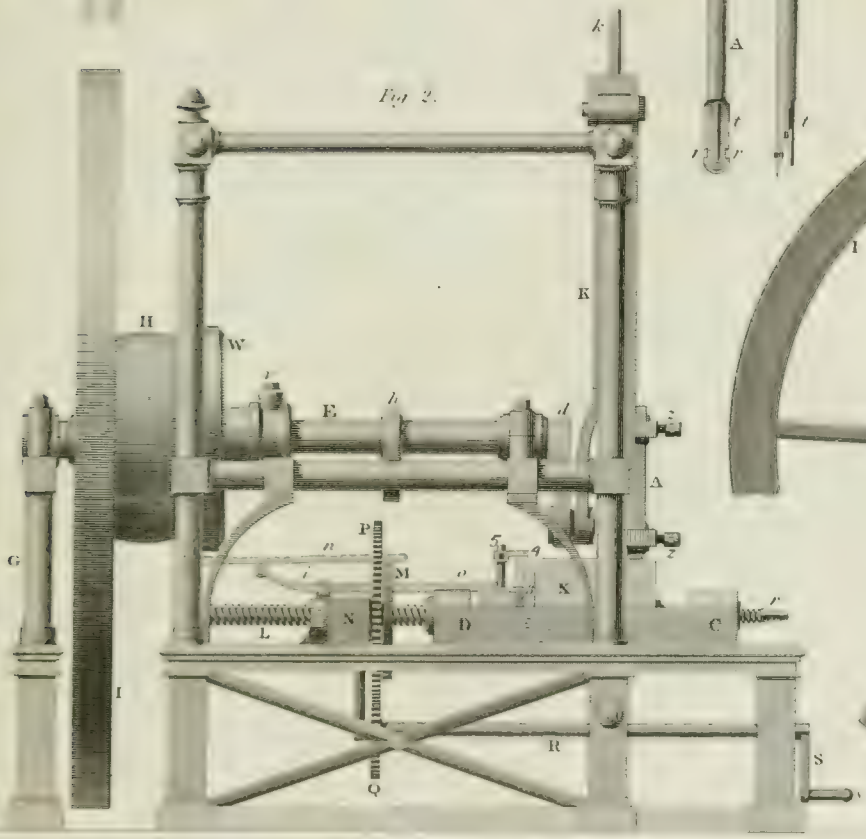

Fig 4

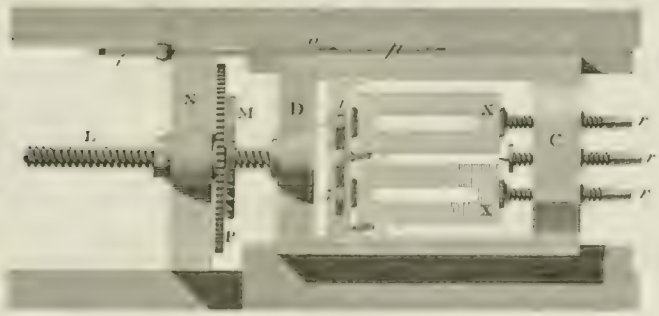

Fig 5.

J. Farey del.

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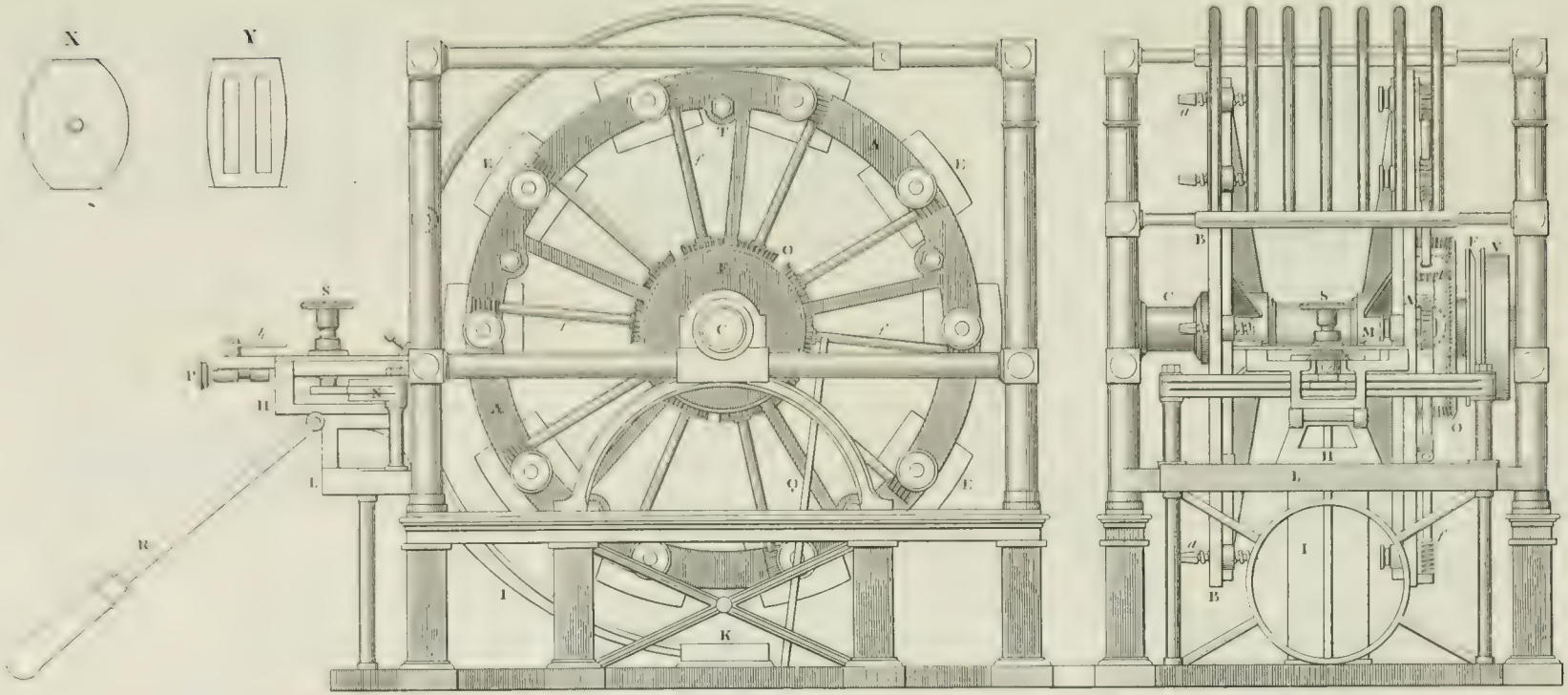
Lowry Sc.

BLOCK MACHINERY AT PORTSMOUTH.

SHAPING Engine.

Elevation Fig. 1.



End View. Fig 2

Fig. 3. Plan.

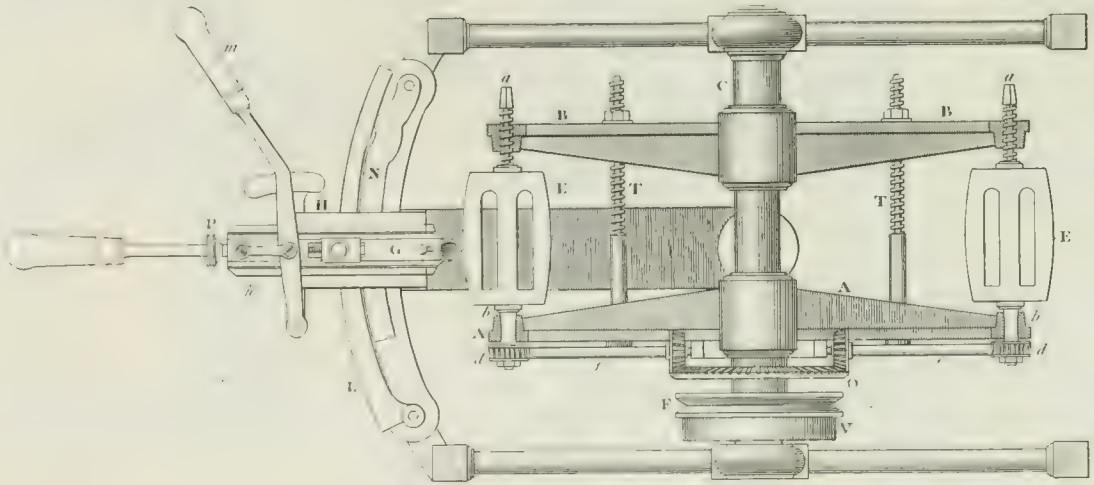
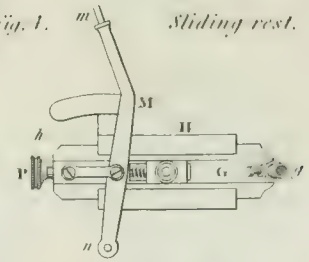
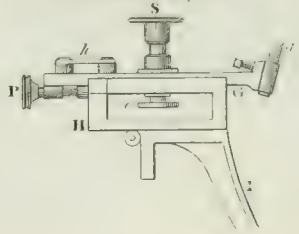


Fig. 4. Sliding rest.



Gauge.

Elevation Fig. 5.



J. Farey Jun. del.

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Invented by Mr. Brunel.

Fig. 1

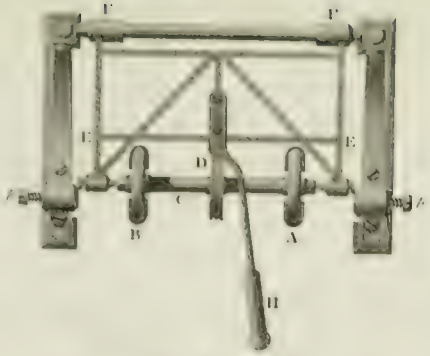


Fig. 2

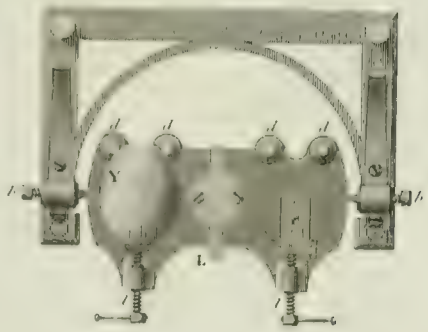
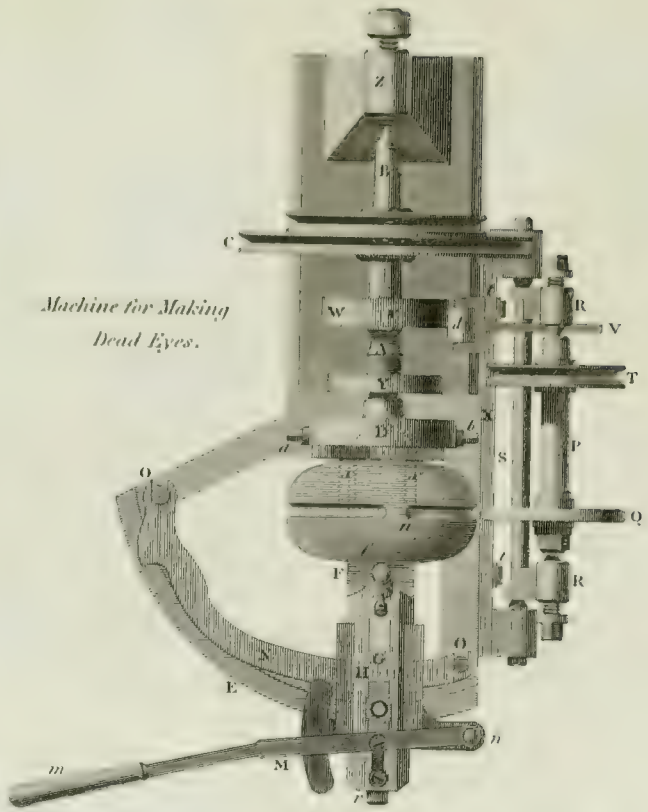


Fig. 3

Machine for Making Dead Eyes.

Fig. 6.



SCORING Engine.

Fig. 4

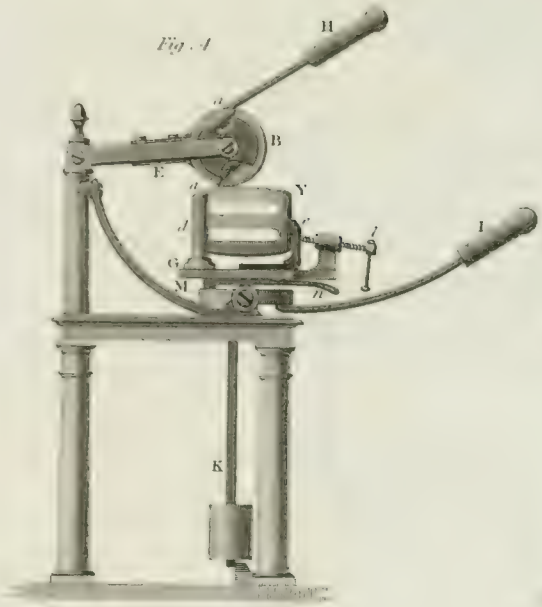


Fig. 5.

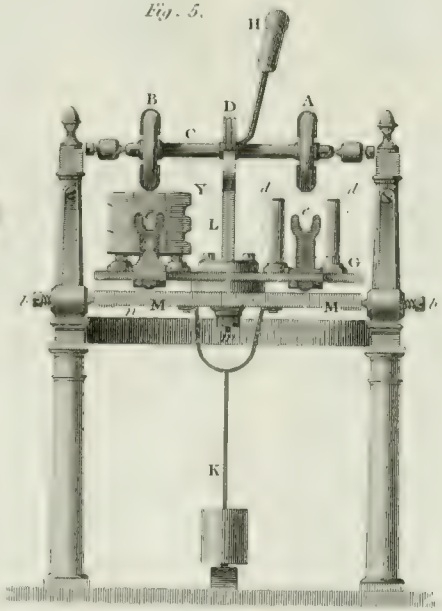
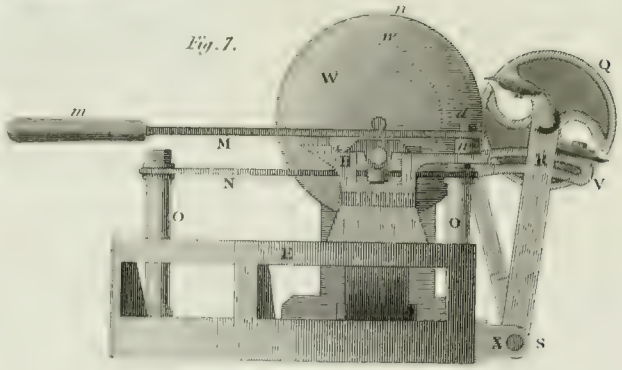


Fig. 7.



J. Farey delin.

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Lowry Sc.

CAMP.

PLAN OF A ROMAN CONSULAR CAMP ACCORDING TO POLYBIUS.

EXPLANATION AND REFERENCES.

1 The Prætorium or General's ground set apart for the Consul containing 40000 Roman square feet

2 Ground behind the tents of the Tribunes for their Horses, Beasts of Burthen, Baggage &c.

3 Ground where the tents of the Tribunes were pitched

4 Ground behind the tents of the Prefecti of the Allies for their Horses Beasts of Burthen, Baggage &c.

5 Ground where the tents of the Prefecti of the Allies were pitched.

6 A cross-street 100 feet wide called [illegible] which the encampments of the cavalry and infantry both of the Roman legions and of their Allies had their beginnings or commencements.

7 A street 50 feet wide between the [illegible]

8 The Horse of two Roman legions in ten troops each

9 The Triarii of two legions in ten Maniples each

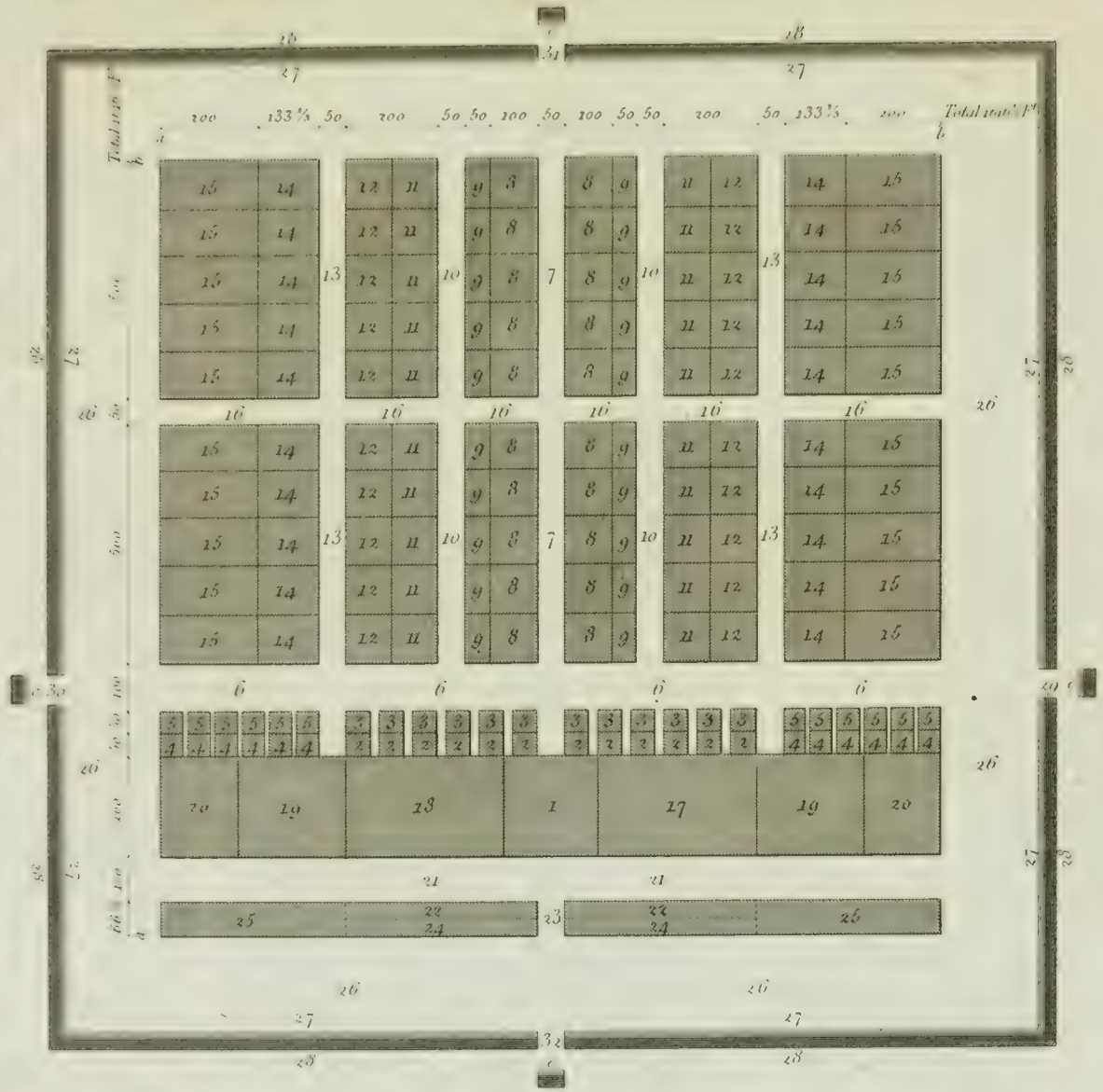
10 Two streets 50 feet wide each between the Triarii and Principes of two legions.

11 The Principes of two legions in ten Maniples each

12 The Hastati of two legions in ten Maniples each.

13 Two streets 50 feet wide each between the Hastati of the two Roman legions and the Horse of the Allies.

14 The Horse of the Allies wanting the Extraordinarii



A Scale of 1000 Feet.

15 The Infantry of the Allies wanting the Extraordinarii who amounted to a fifth part of their whole number, in ten divisions each on the right and left sides of the Encampment.

16 Via Quintana 50 feet wide running across the camp between the fifth and sixth Maniples and troops reckoned from the Principia.

17 The Quæstorium. 18 The Forum.

19 Quarters or encamping ground for the Horse guards of the Consul and Quæstor.

20 Quarters for the Foot-guards of the Consul and Quæstor

21 A cross street 100 feet wide.

22 The extraordinary Horse except those selected for the guards of the Consul and Quæstor.

23 A street 50 feet wide.

24 The extraordinary Foot except those selected for the guards of the Consul and Quæstor.

25 Quarters for any strangers that might arrive at the Camp.

26 A space two hundred feet broad between the outermost tents and the Rampart.

27 The Rampart. 28 The Ditch.

29 Porta principalis dextra

30 Porta principalis sinistra.

31 Porta Decumana according to some but Porta Prætoria according to others.

32 Porta Prætoria according to some but Porta Decumana according to others

a b a b Two right lines on which are marked the principal dimensions of the different parts of the camp shewing the whole to be a square or an equilateral right angled quadrangle

e A Traverse Breastwork or Epaulement with a ditch before it opposite to each of the Gates.

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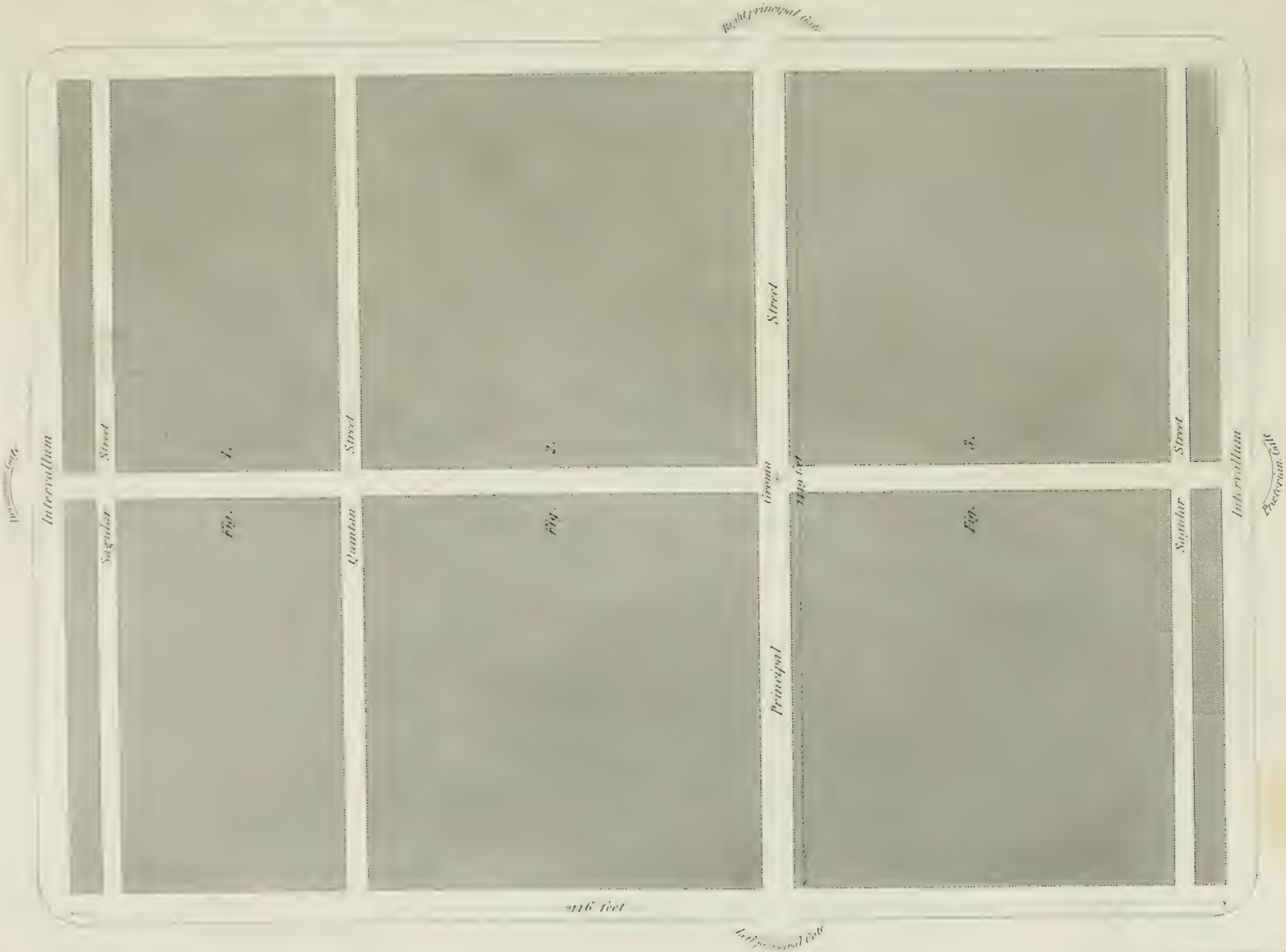
[illegible] to the Hygenian System of CASTRAMETATION.

The total length of the CAMP from front to rear is 2310 Roman Feet or 2332 English Feet, and its extreme breadth from right to left is 1620 Roman Feet or 1663 English Feet. The intervallum is 60 Roman Feet wide or 158 English; and the length of the space that was occupied by the troops is 2116 English Feet and its breadth 1449.



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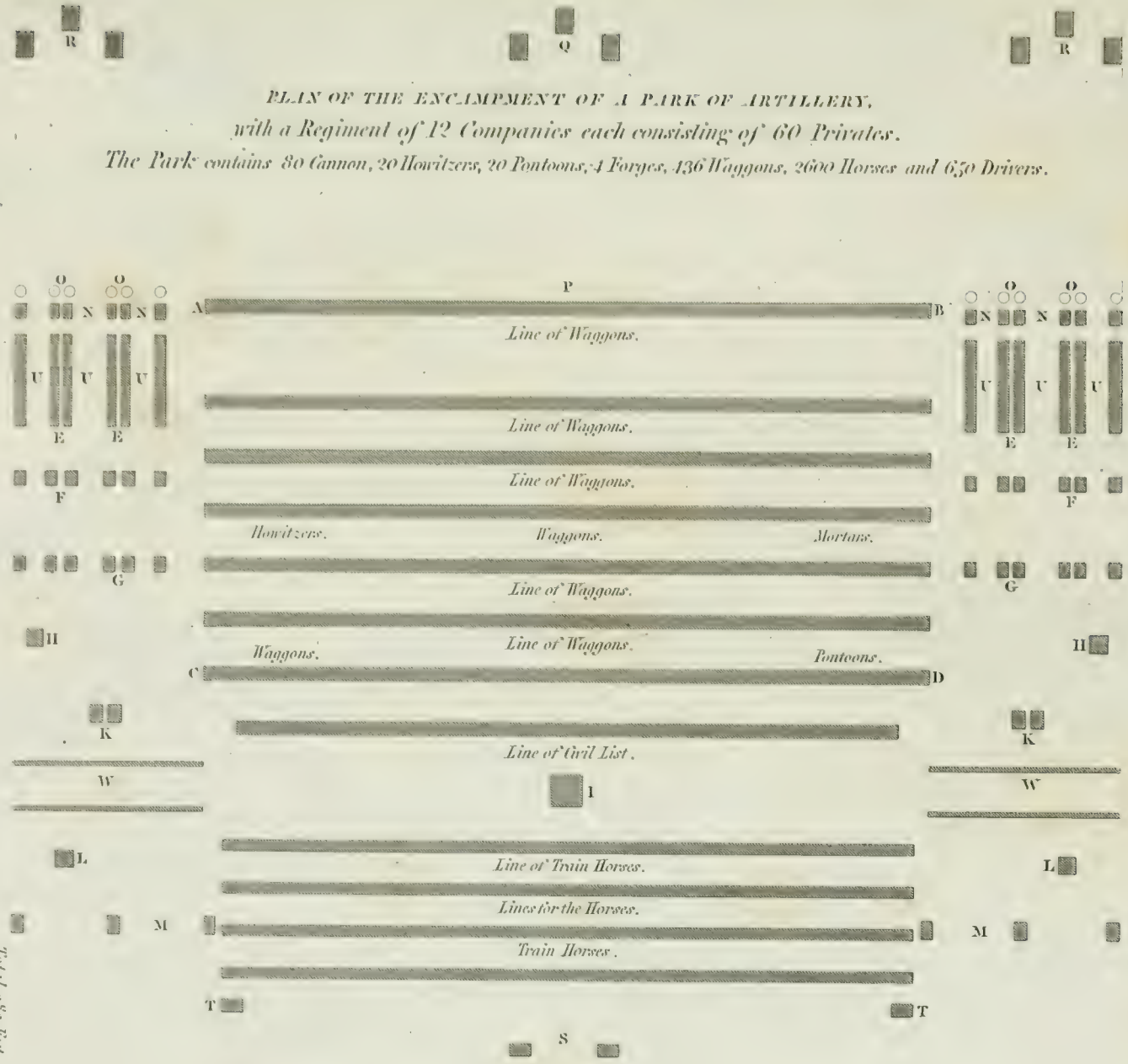
ARTILLERY.

ENCAMPMENT.

PLAN OF THE ENCAMPMENT OF A PARK OF ARTILLERY,
with a Regiment of 12 Companies each consisting of 60 Privates.
The Park contains 80 Cannon, 20 Howitzers, 20 Pontoons, 4 Forges, 136 Waggons, 2600 Horses and 650 Drivers.

EXPLANATION.

A.B.C.D. *Bounds of the Park.*
E. *Artillery Ground.*
F. *Subalterns Tents.*
G. *Captains Tents.*
H. *Lieutenant Colonel, and Majors Tents.*
I. *Colonels Tent.*
K. *Staff Officers Tents.*
L. *Grand Sutlers Tents.*
M. *Petit Sutlers Tents.*
N. *Serjeants Tents.*
O. *Bells of Arms.*
P. *Alarm or Evening Guns.*
Q. *Army Guard.*
R. *Artillery Guard.*
S. *Rear Guard.*
T. *The Forges.*
U. *The Streets.*
W. *The Baggage Tents and Horses of the Regiment.*



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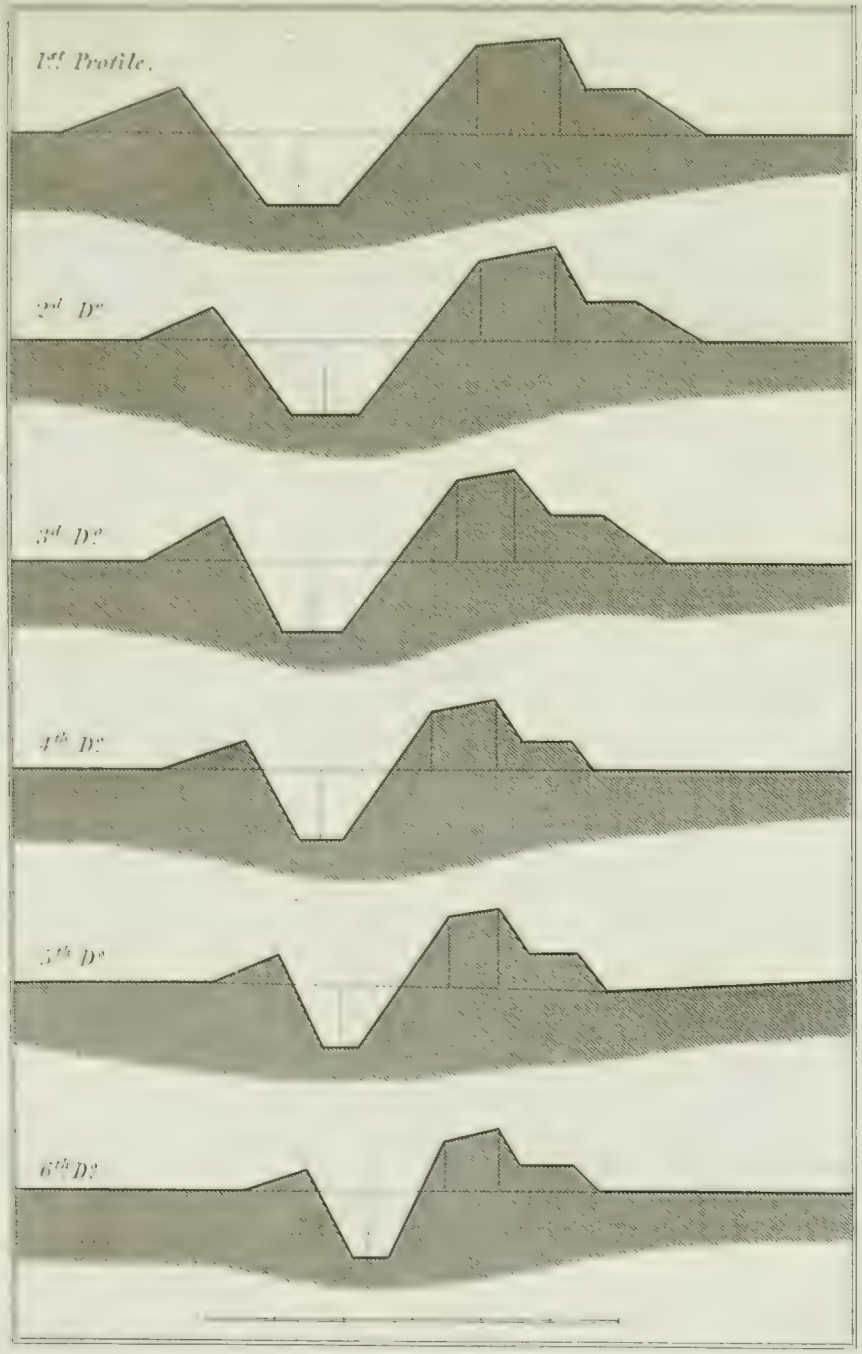
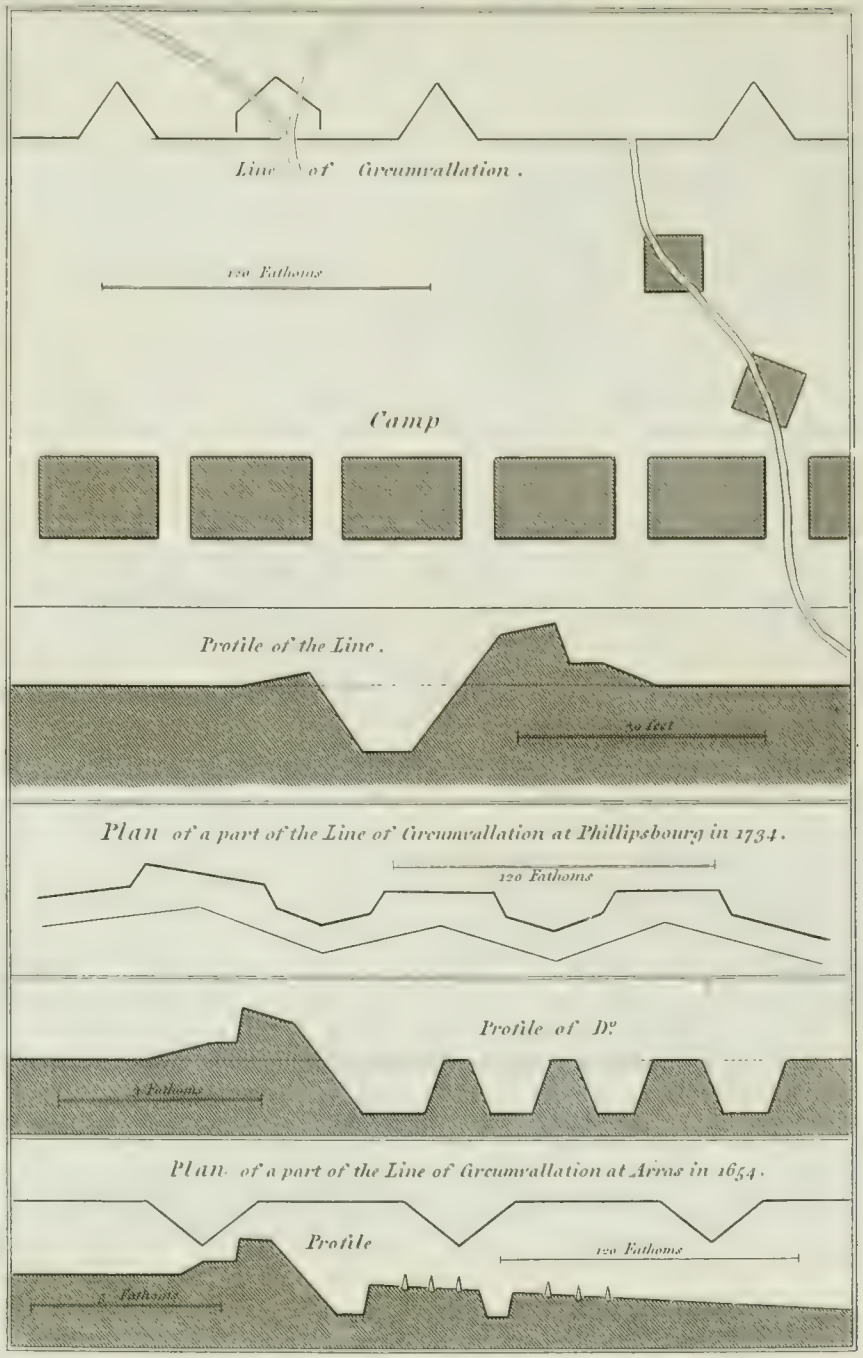
CAMP.

Profiles of Lines of Circumvallation according to Vauban.



Lines of Circumvallation with Camp.



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W. Lowry Sculp.

PLATE V.

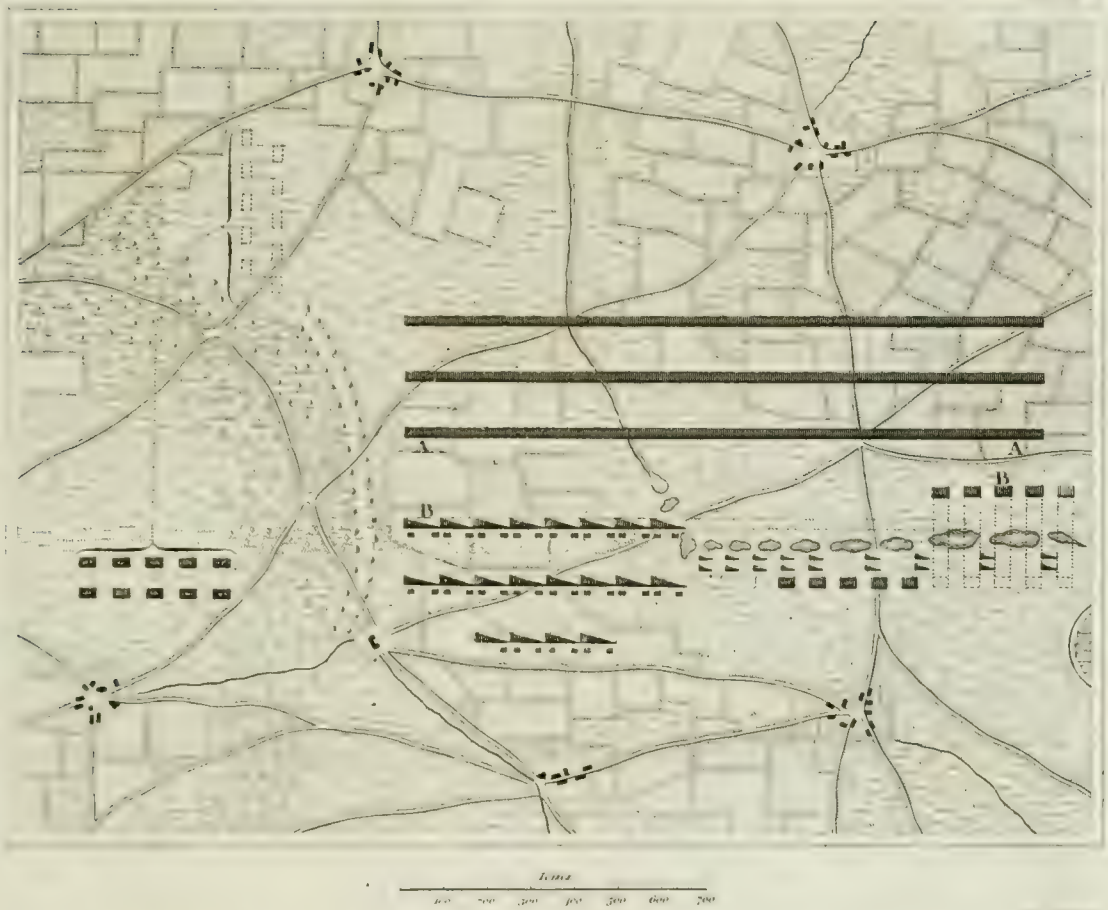
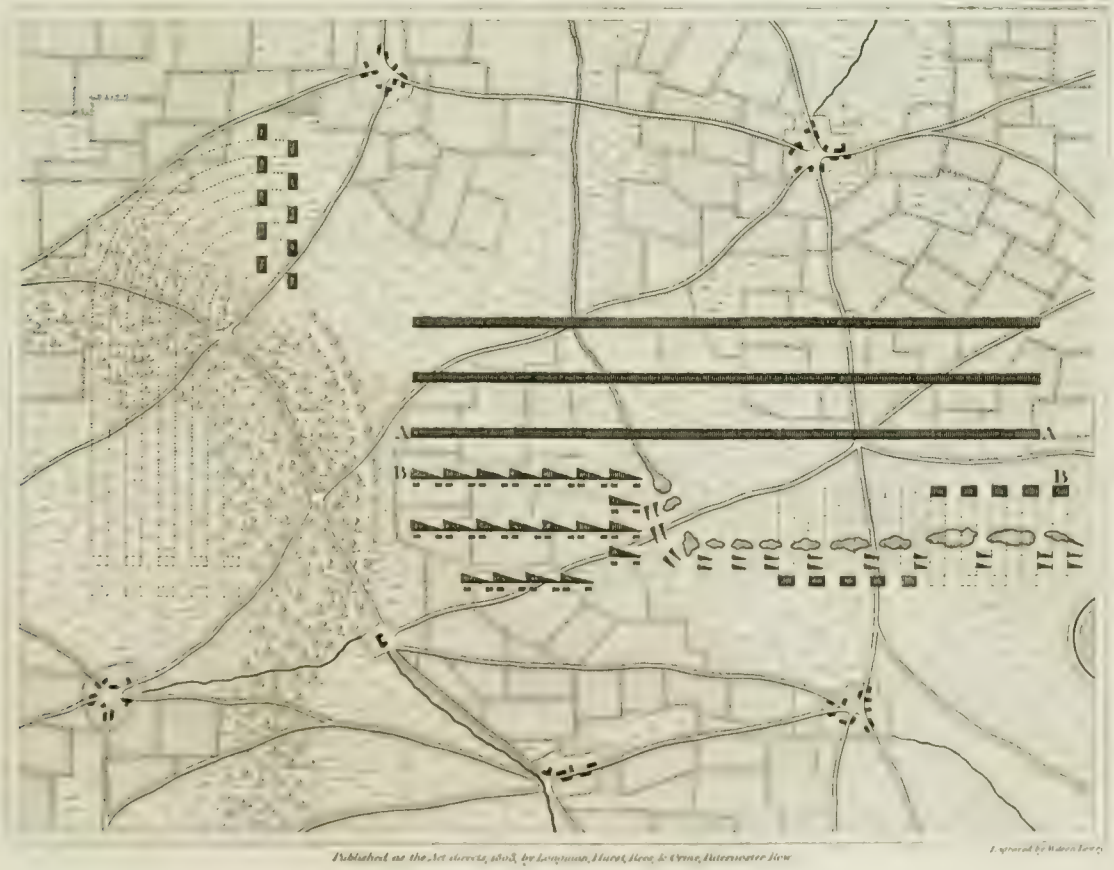


PLATE VI.



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CASTRAMETATION.

PLATE VII.

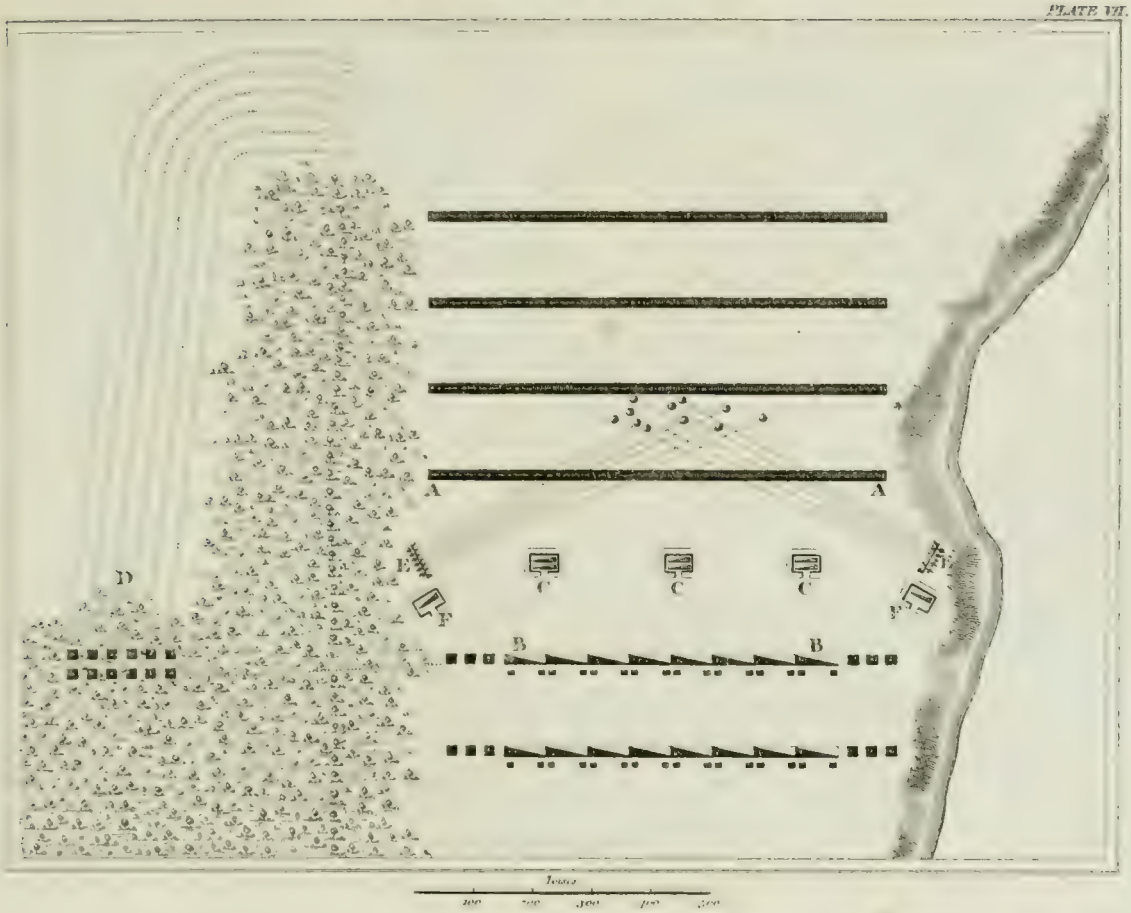
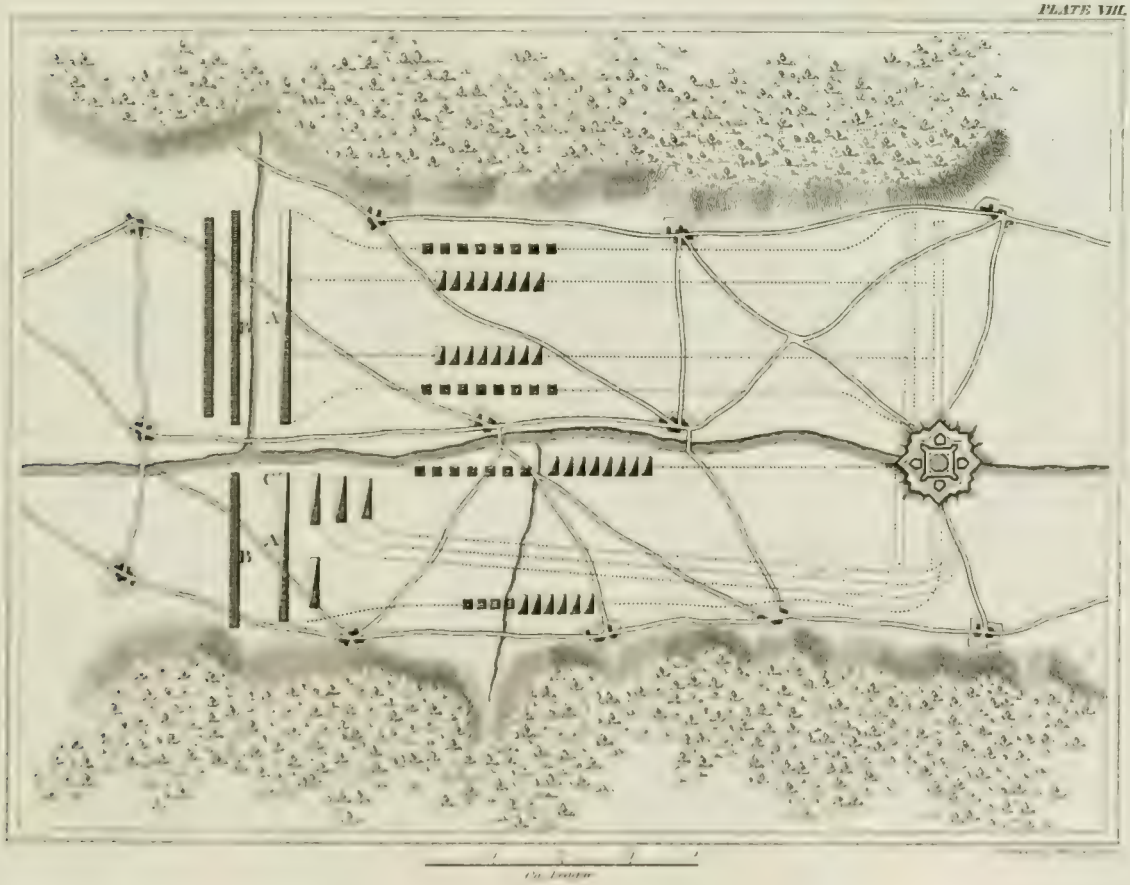


PLATE VIII.



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CASTRAMETATION.

PLATE IX.

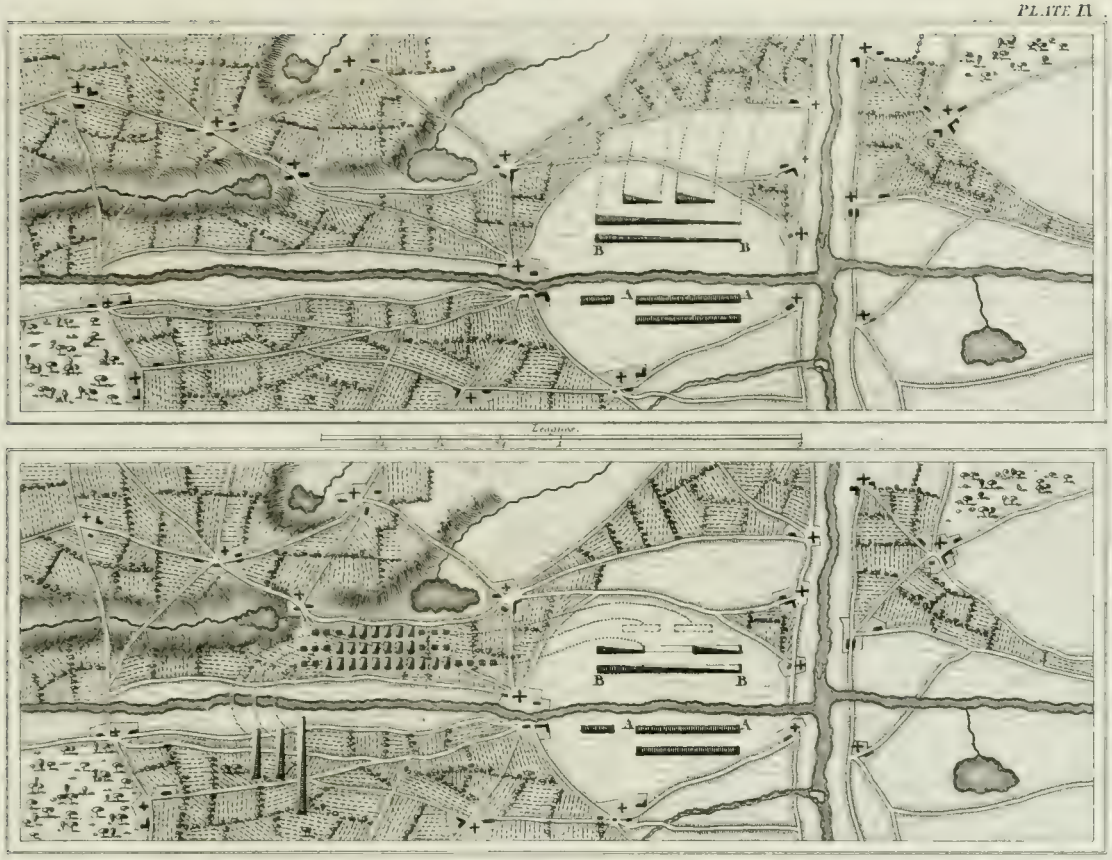

PLATE X.

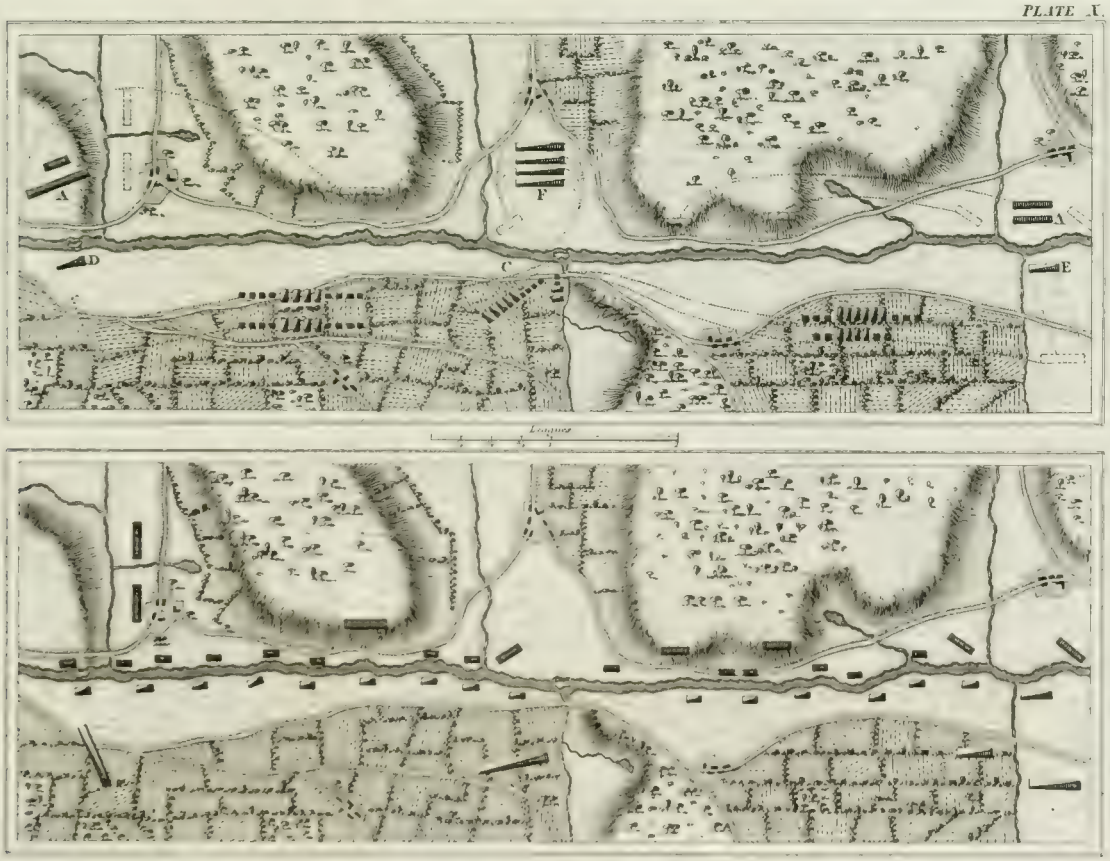

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PLATE XI.

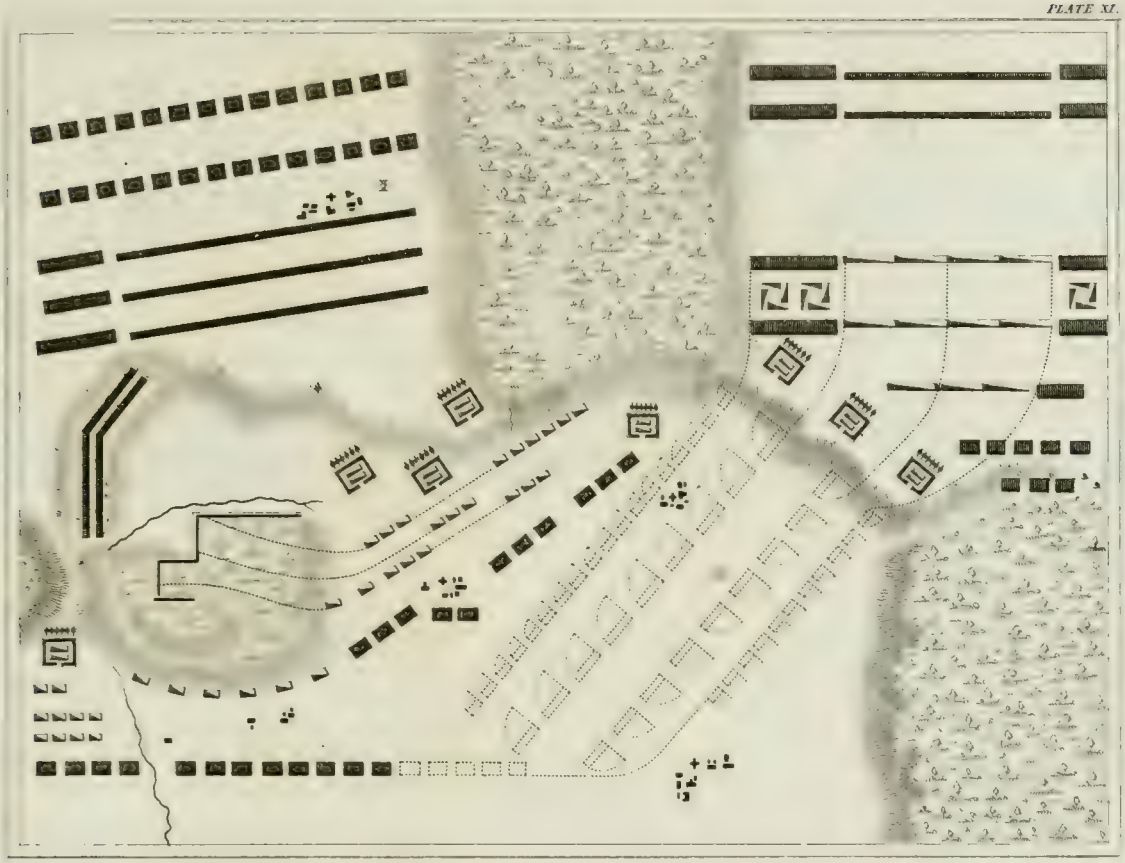
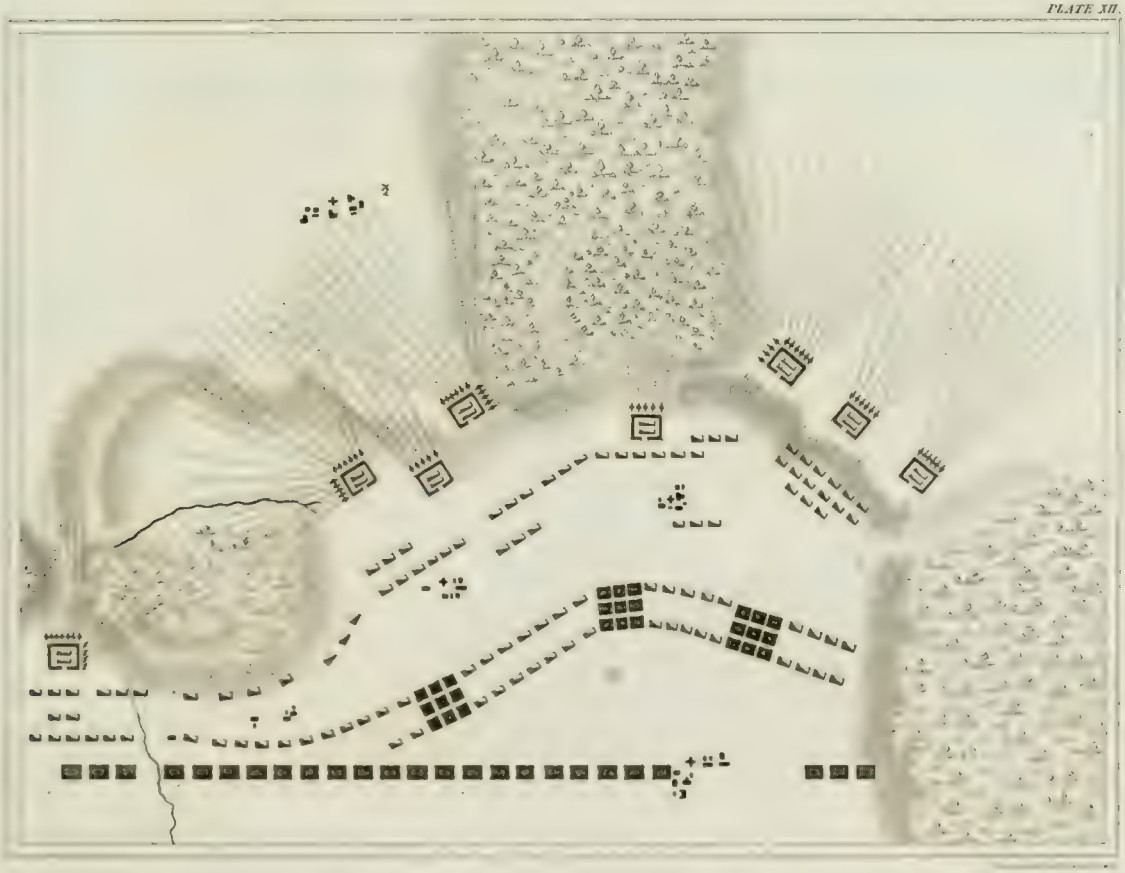


PLATE XII.



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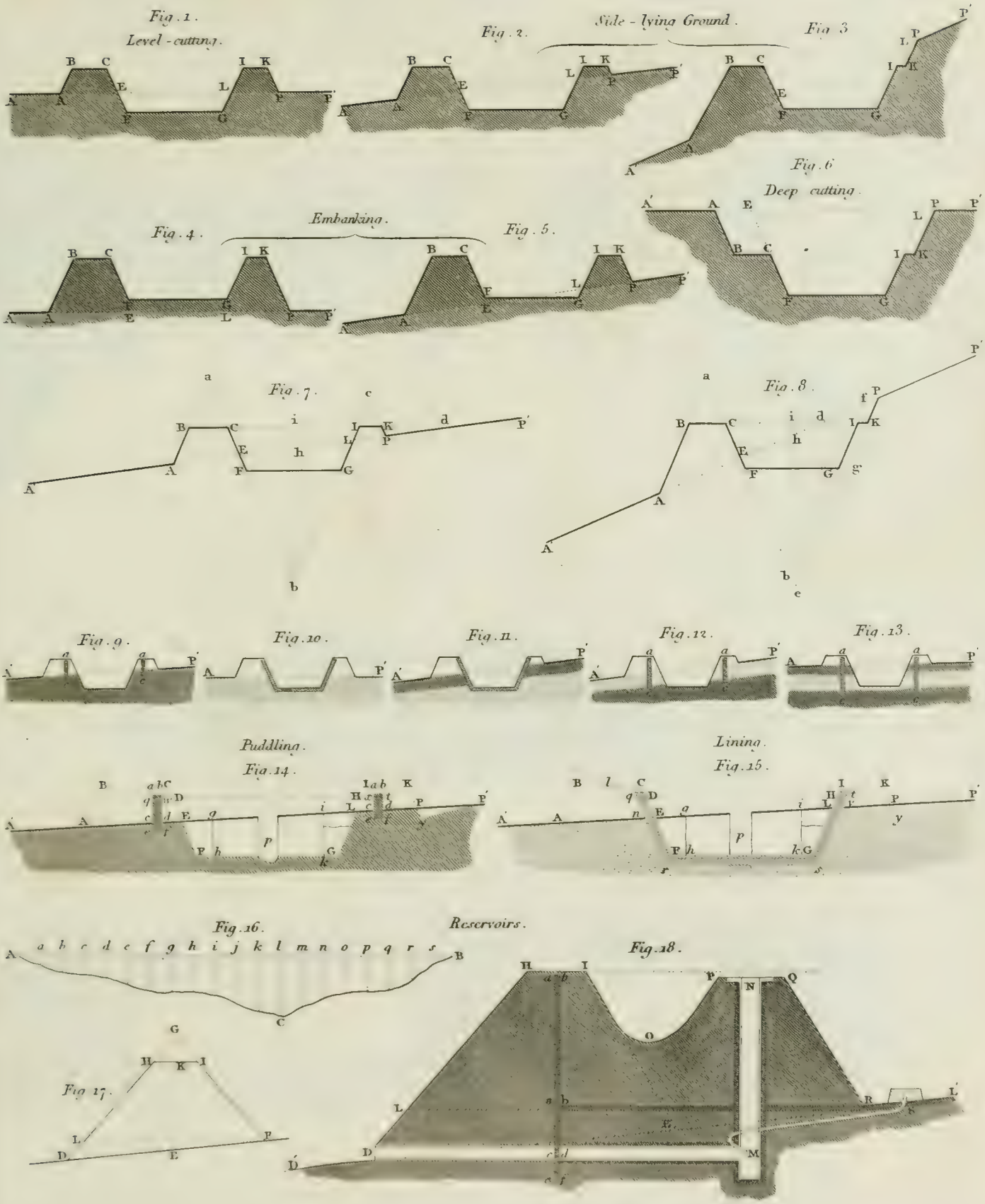

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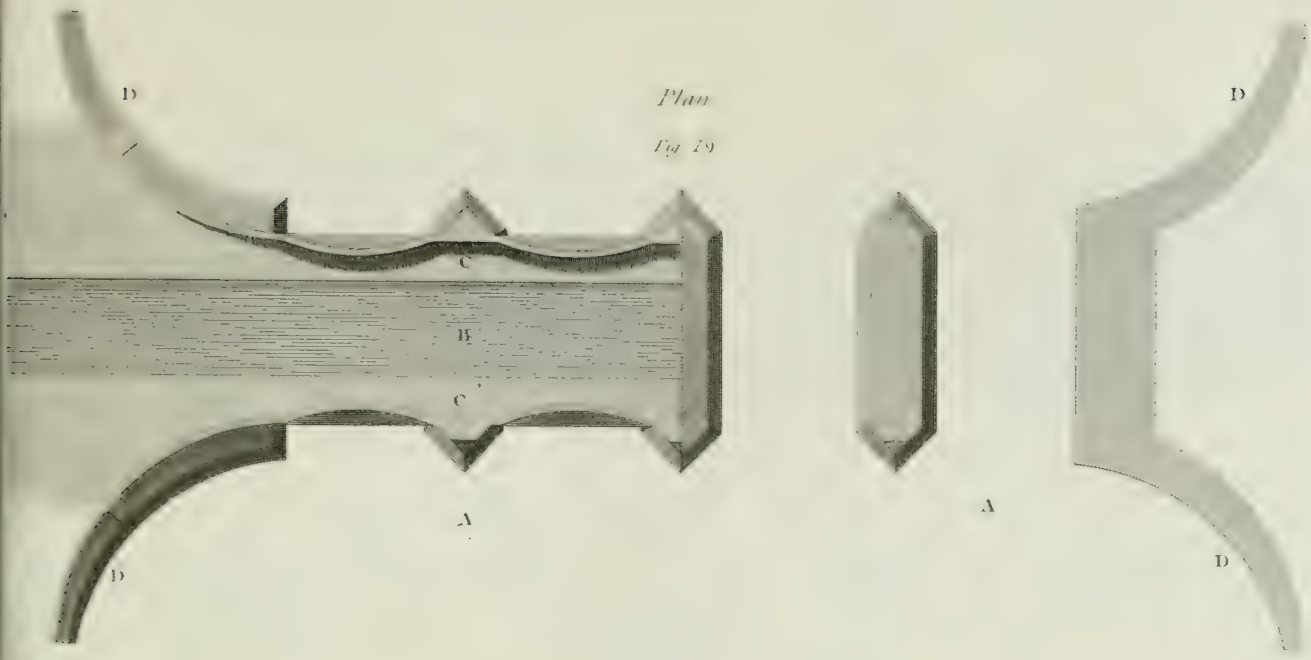
Aqueduct BRIDGE at Kelvin on the Forth & Clyde Canal.

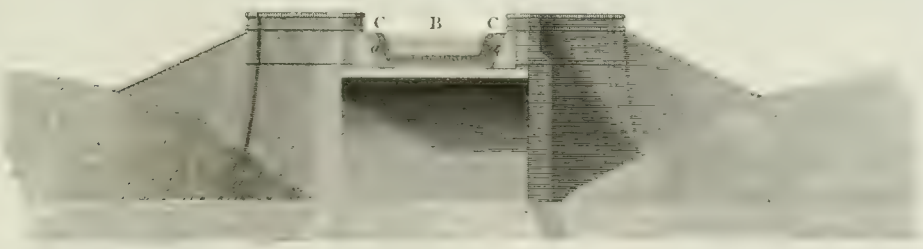
Plan

Fig. 19



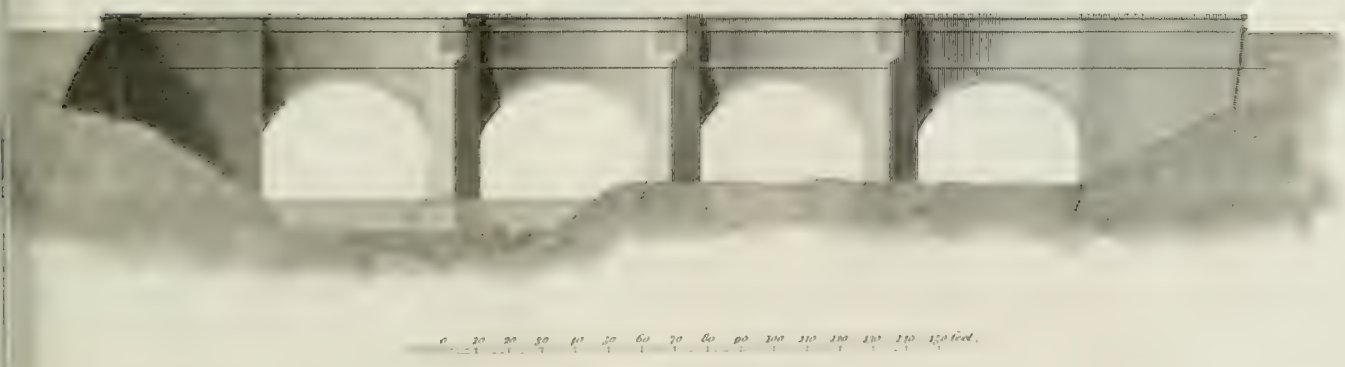
Transverse Section.

Fig. 20.



Elevation.

Fig. 21.



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CAST IRON AQUEDUCTS.

Mr. Telford's, on the Shrewsbury Canal at Long.

Fig. 22.

by Mr. Fulton.

Fig. 23.

Fig. 24.

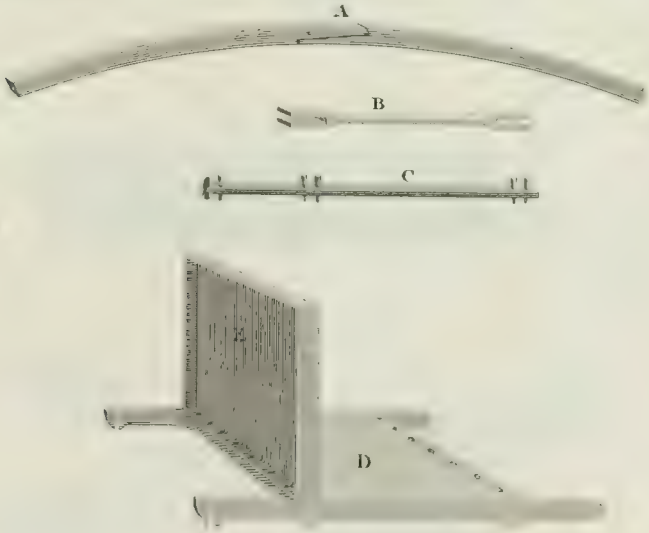

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Fig. 25. Embankment

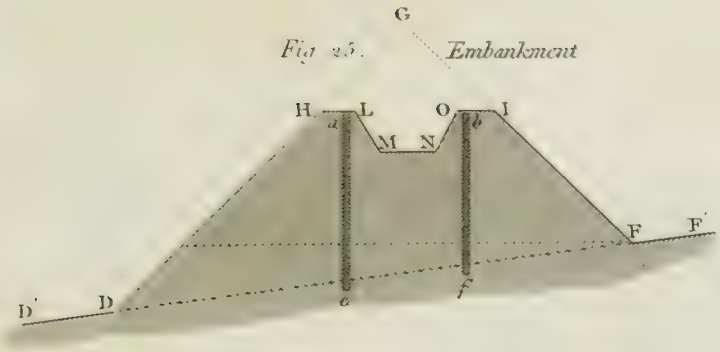


Fig. 26 Safety Gate.

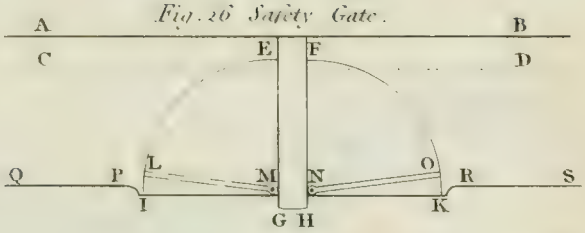


Fig. 27. Weir.

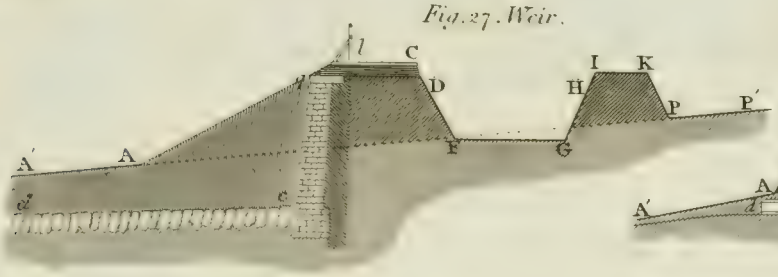


Fig. 28. Circular Weir.

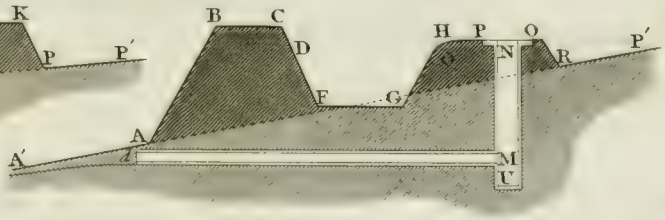


Fig. 29.

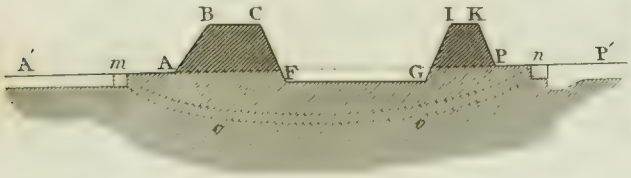
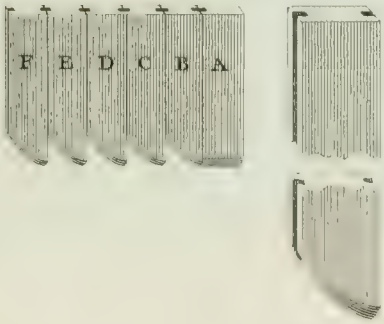


Fig 30 Pile-planks.



Iron Rail-ways.

Fig. 31.

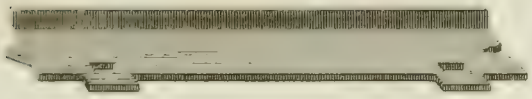


Fig. 34.

Fig. 32

Fig. 33

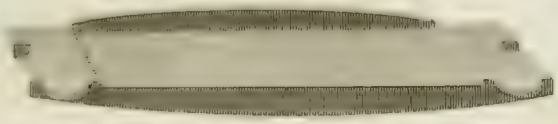
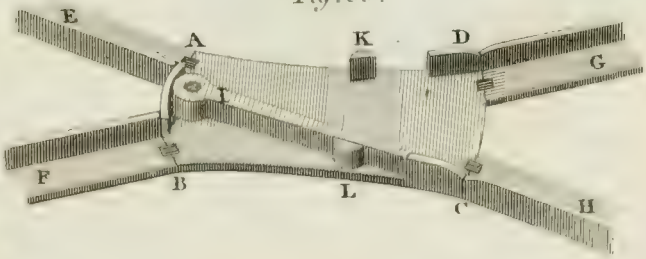


Fig. 35.



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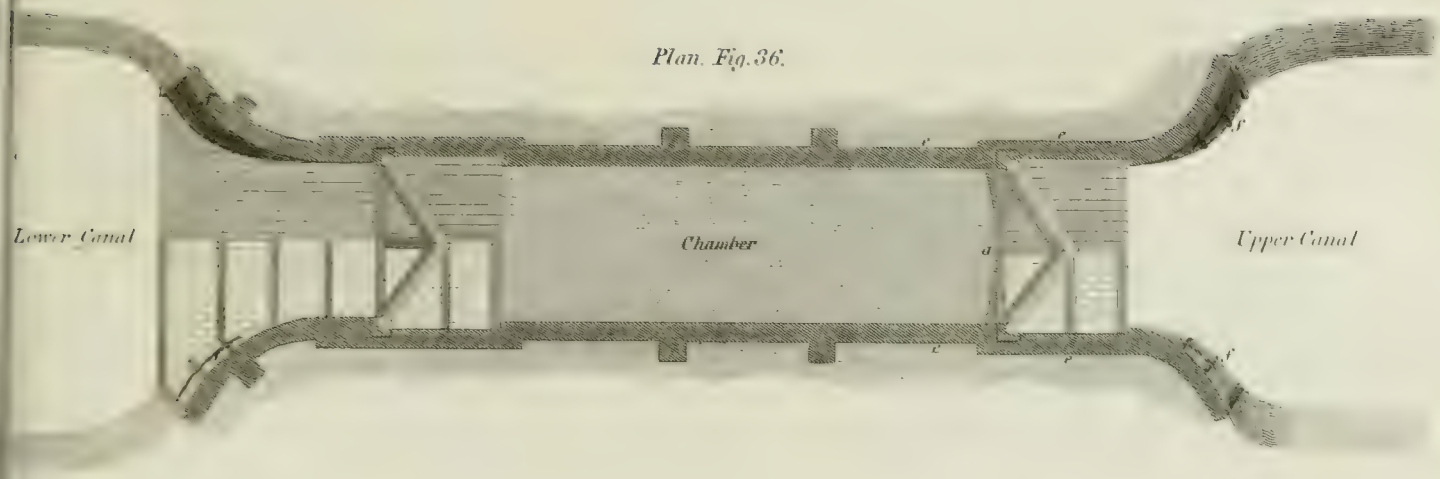
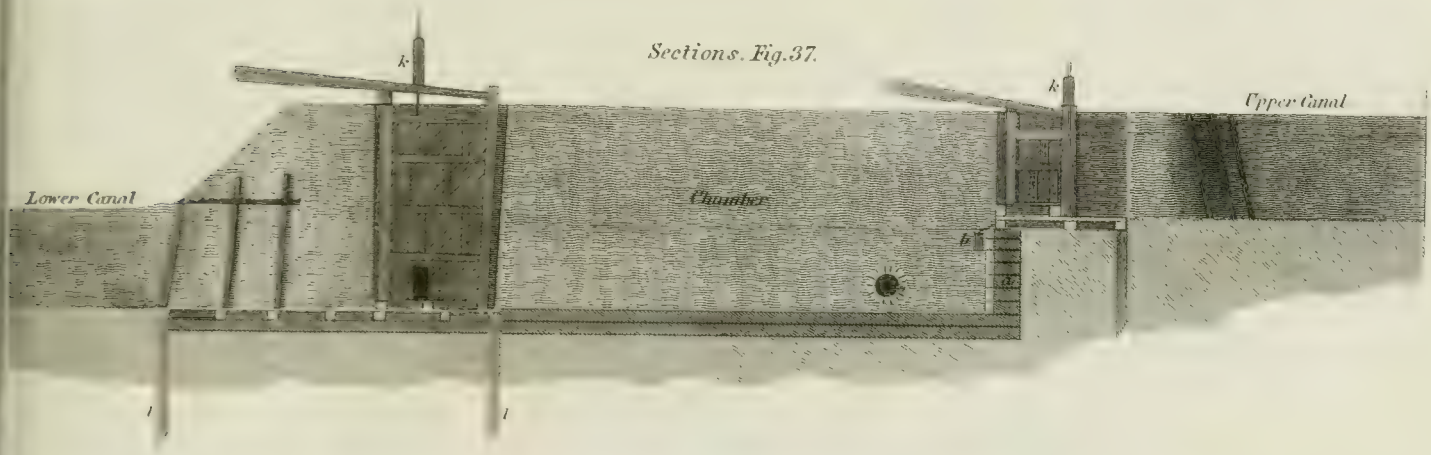
CANALS.

LOCKS.

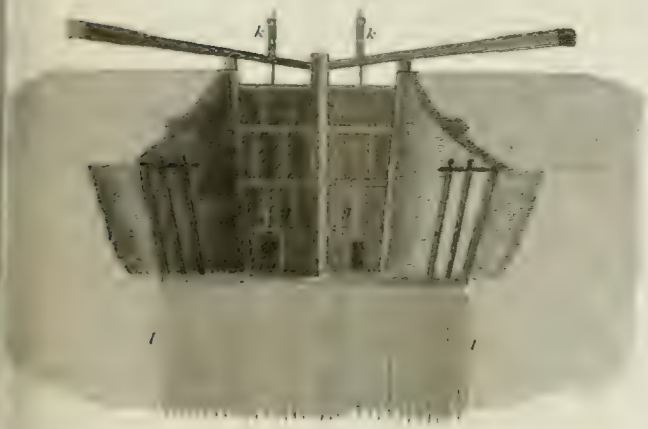
Plan. Fig. 36.



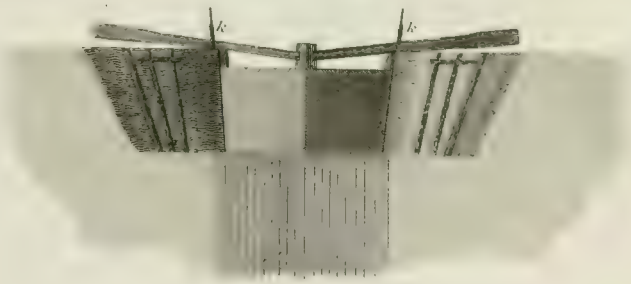
Sections. Fig. 37.



Lower Gates. Fig. 39.



Upper Gates Fig. 38.



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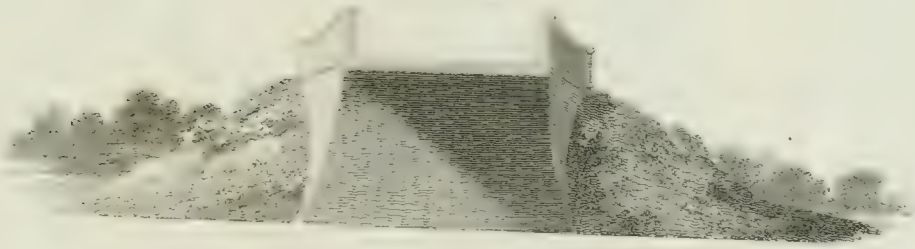
View – Fig. 42.

Section – Fig. 41.



Plan – Fig. 40.

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Swing-Bridge.

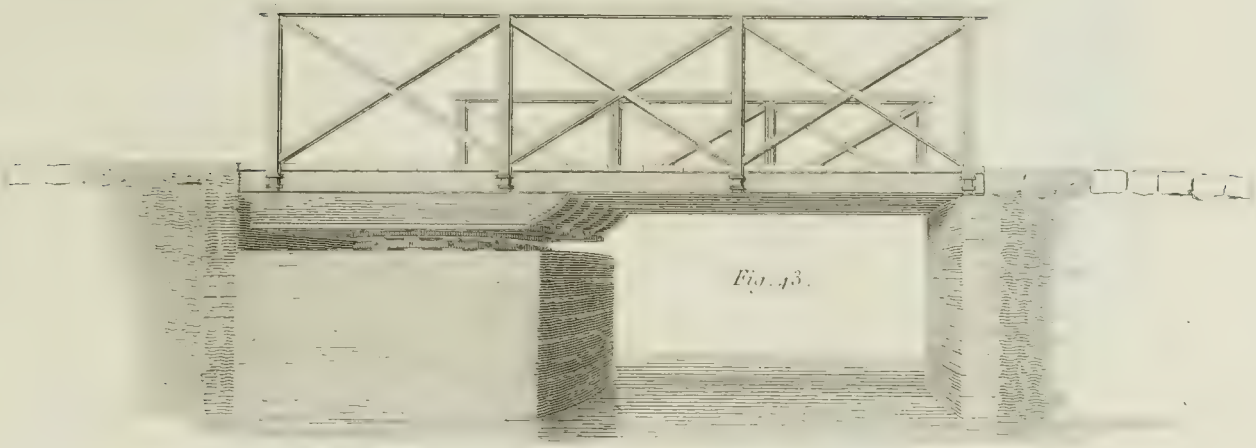


Fig. 44

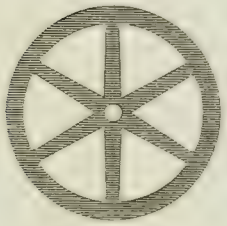


Fig. 45.

Fig. 46.

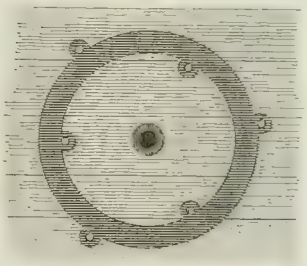
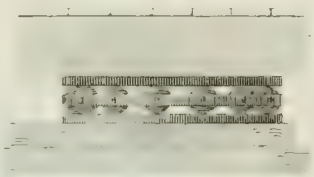


Fig. 47.



NAVIGATOR'S TOOLS &c.

Fig. 48. Barrow.

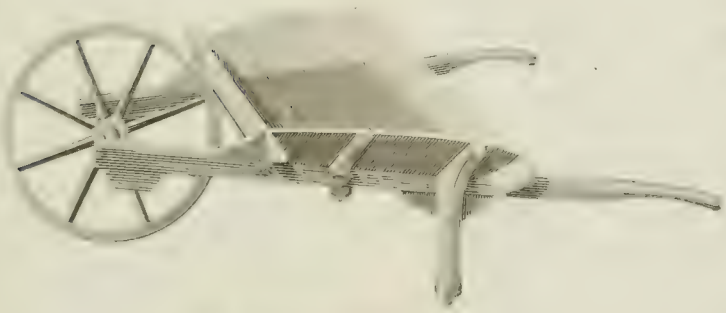


Fig. 49 Horsemans Block.

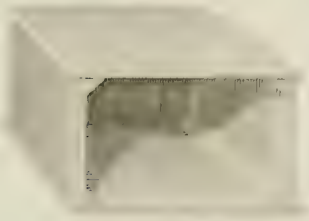


Fig. 50. Grafting Tool.

Fig. 51. Shovel.

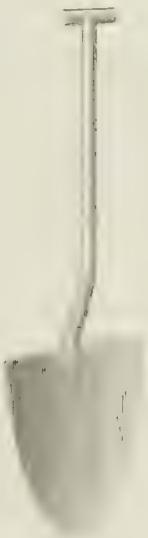
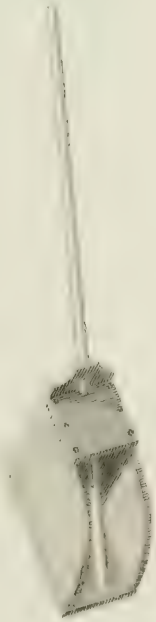


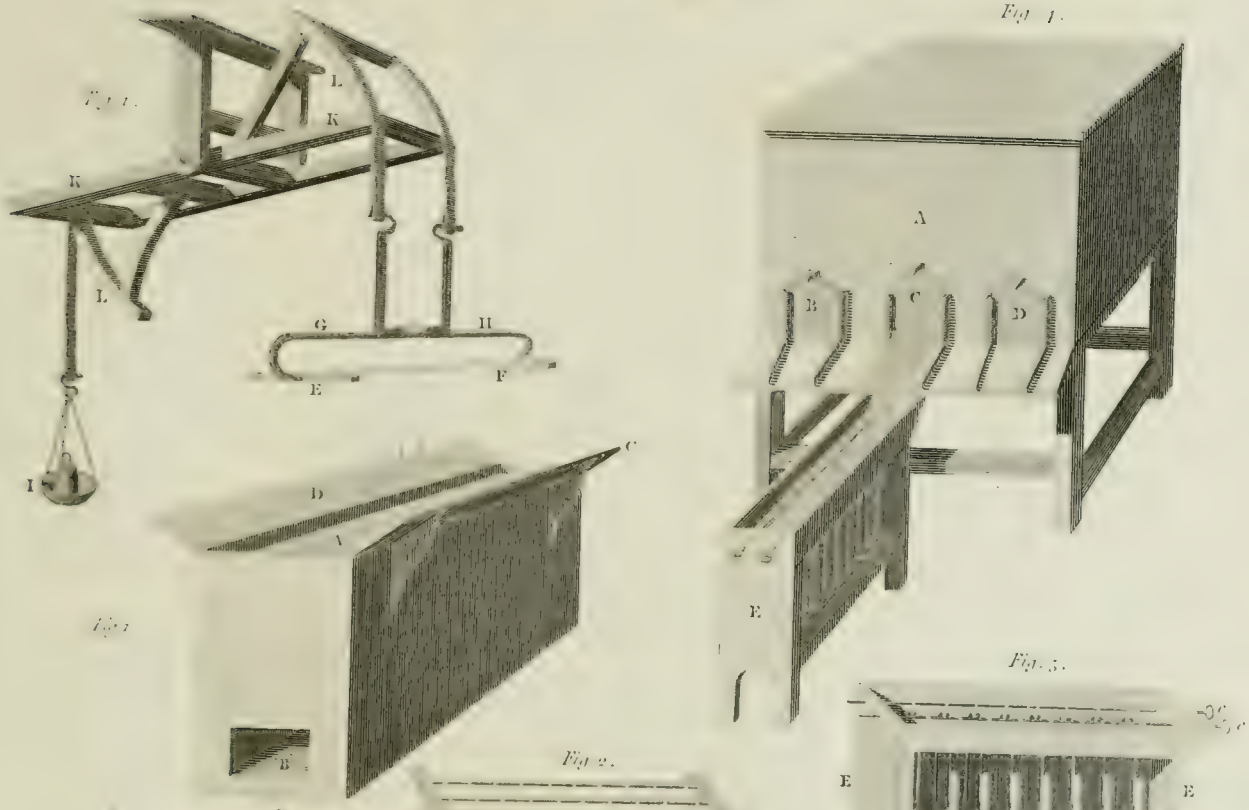
Fig. 52 Scoop.



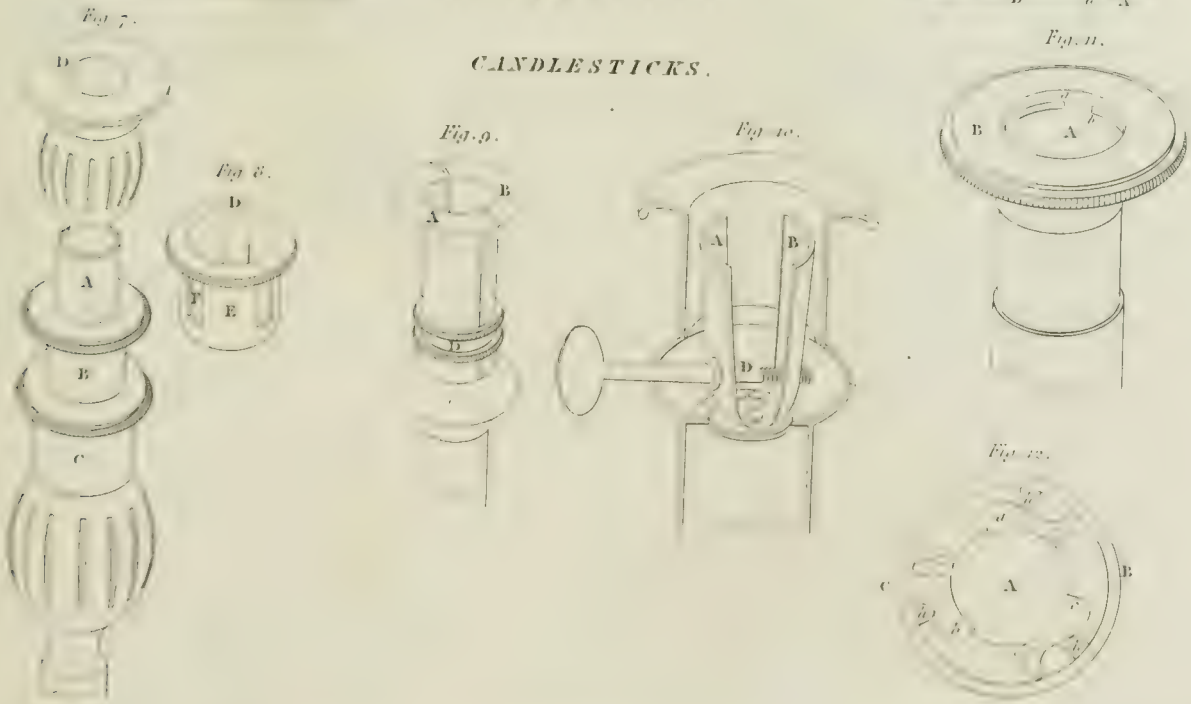
John Fancy Junr. delin. Published as the Act directs, May 1st 1806, by Longman Hurst, Rees & Orme, Paternoster Row. Engraved by Wilson Lowry.

CANDLE.

CANDLE MAKING.



CANDLESTICKS.



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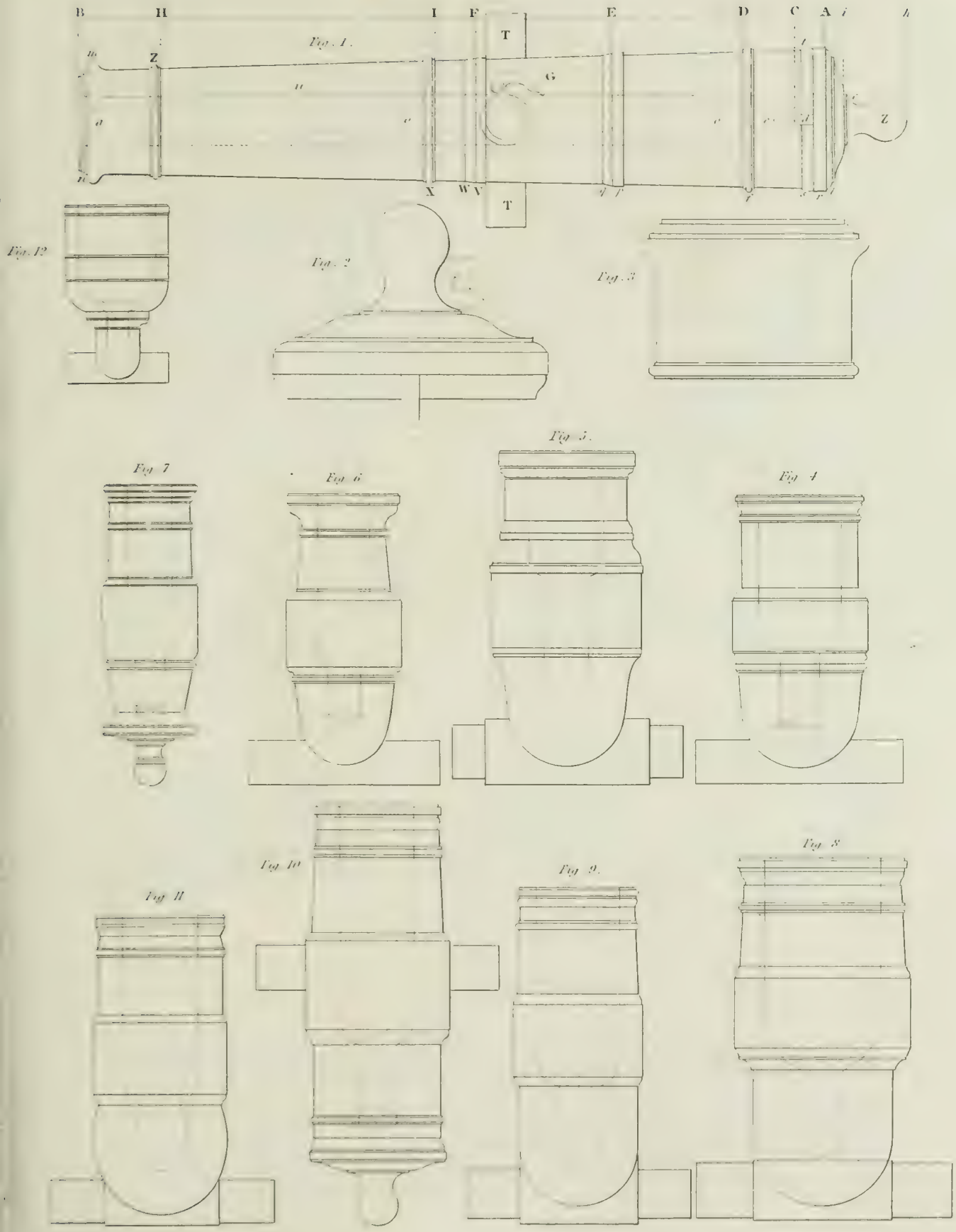

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Lowry Sc.

BORING.

Fig. 13.

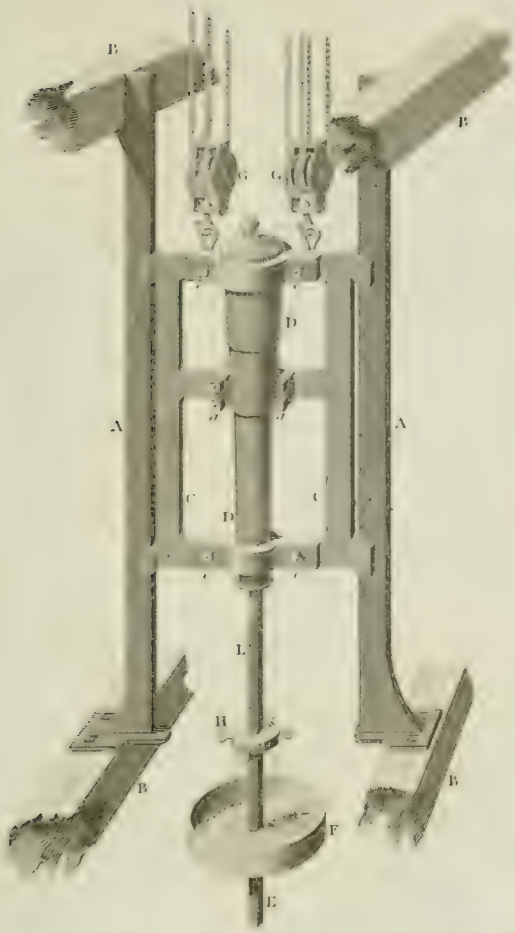


Fig. 11.

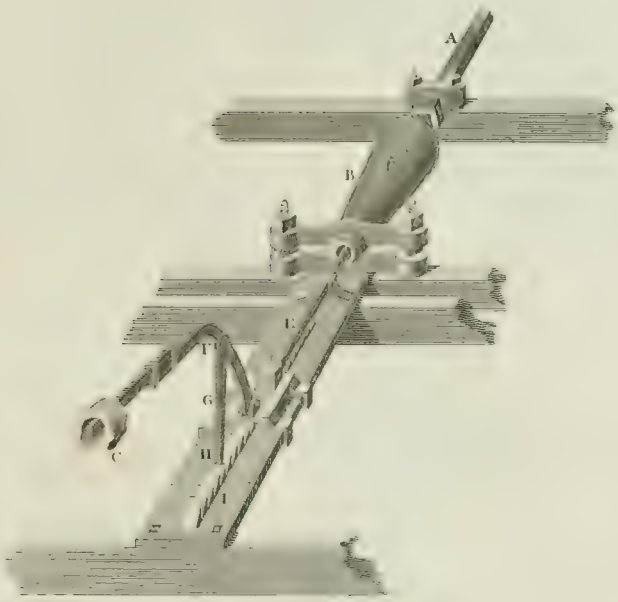


Fig. 15.

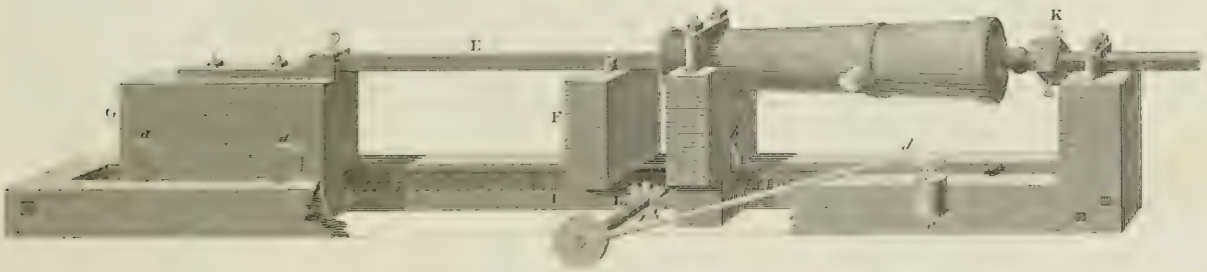
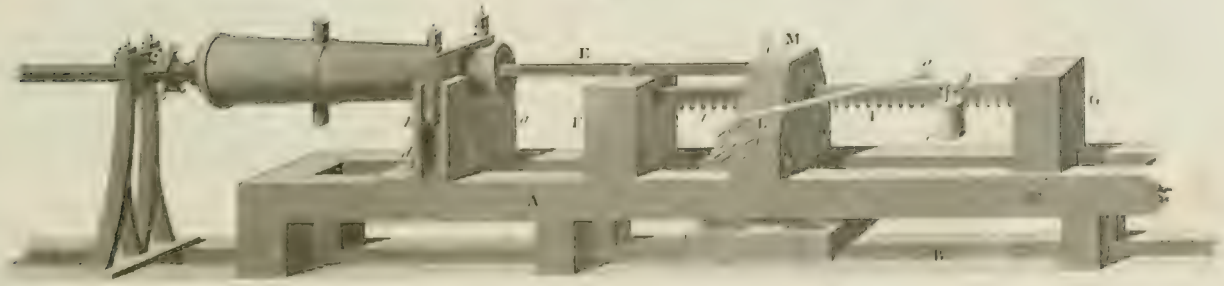


Fig. 16.



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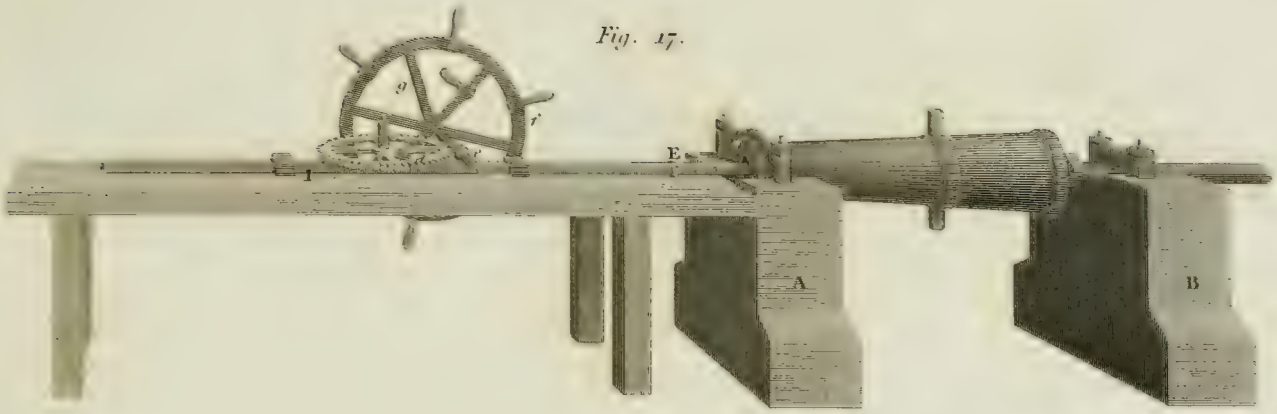
CANNON.

BORING, &c.

Fig. 17.



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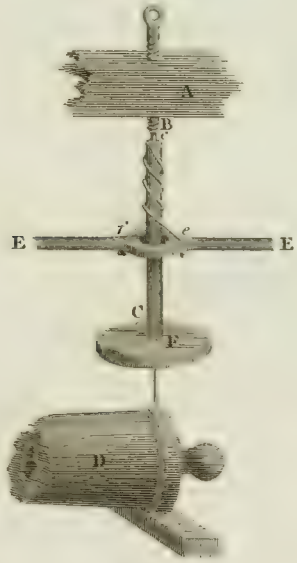

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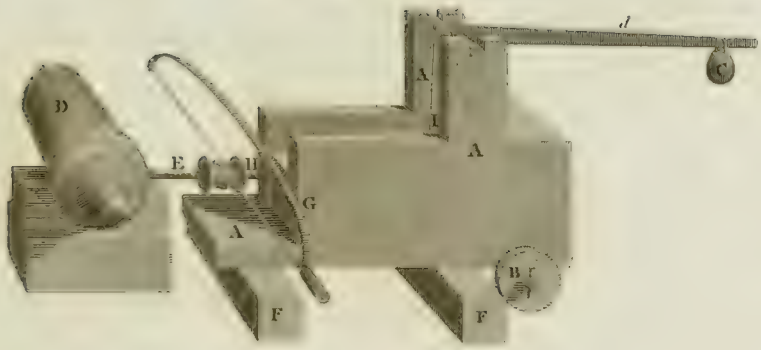

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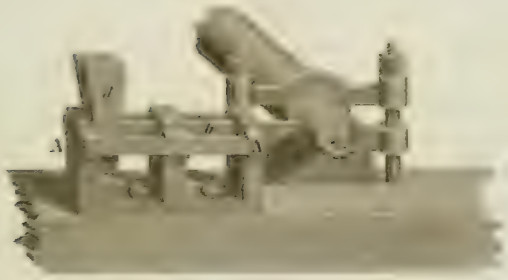

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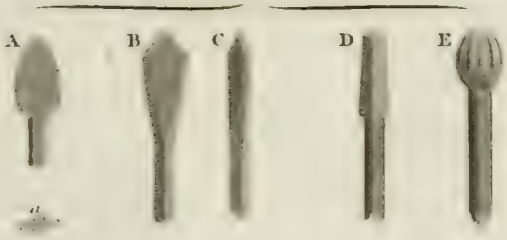

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CANTEENS.

MANUFACTURE OF

by Mr. Geo. Smart.

Fig. 1. A Canteen.

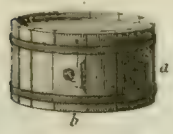

Fig. 2. Crofs cutting Saw.

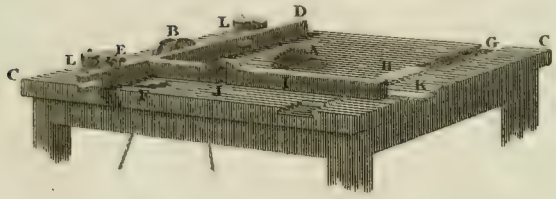

Fig. 3.

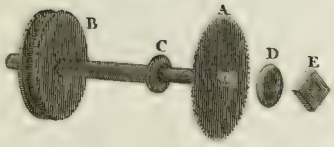

Fig. 4. Tenanting or rebating Saws.

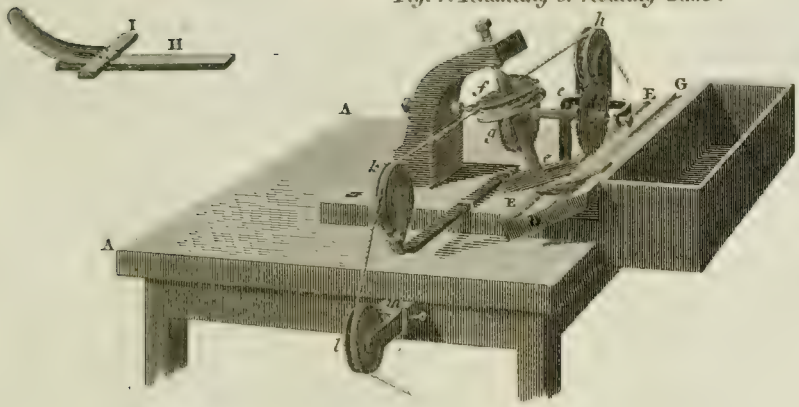

Fig. 5.

Fig. 6. Bung stave.

Fig. 8. Center bit.

Fig. 7. boring Machine.

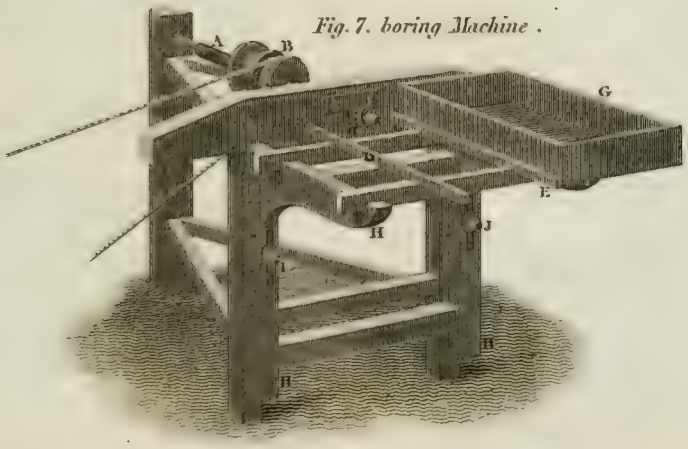

Fig. 9. Slider.

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Fig. 11.
Screw Hoop

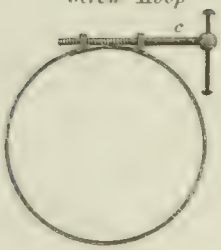


Fig. 12.
Truſs Hoop

Fig. 13.

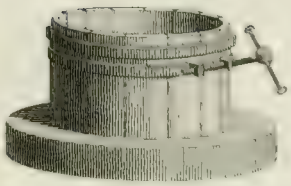


Fig. 10.

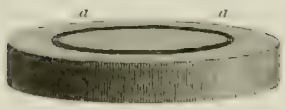


Fig. 15. turning the head.

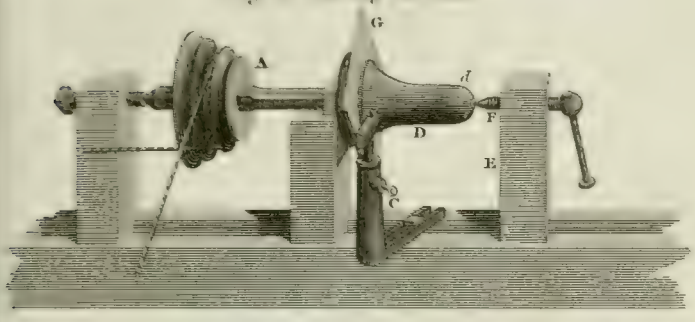


Fig. 14. turning the chime.

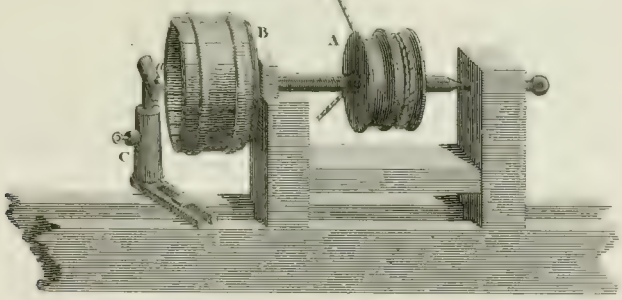
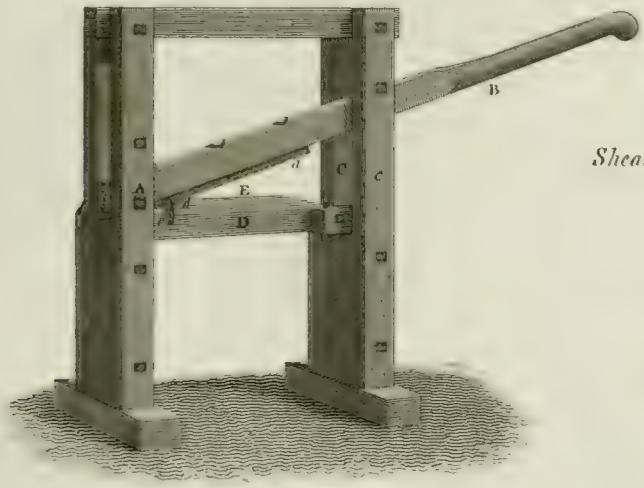


Fig. 16.



Shears

Fig. 17.

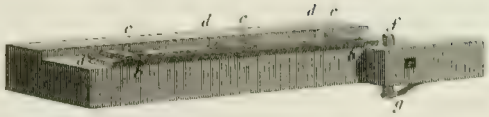


Fig. 18. punching the Hoops.

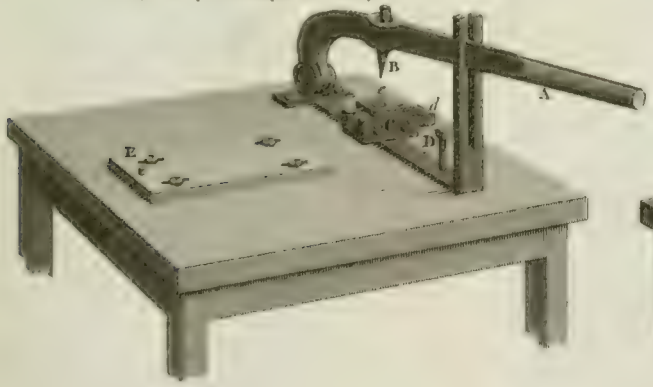
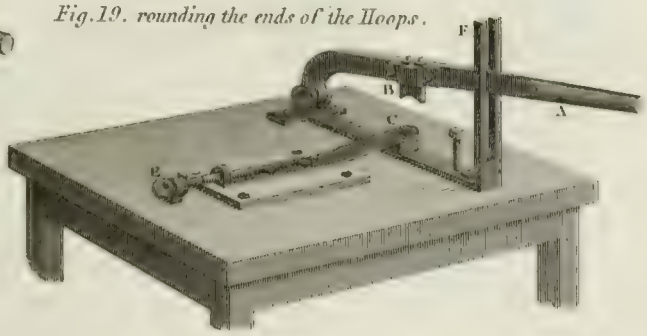


Fig. 19. rounding the ends of the Hoops.



by J. Farey Junr.

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Fig. 1.

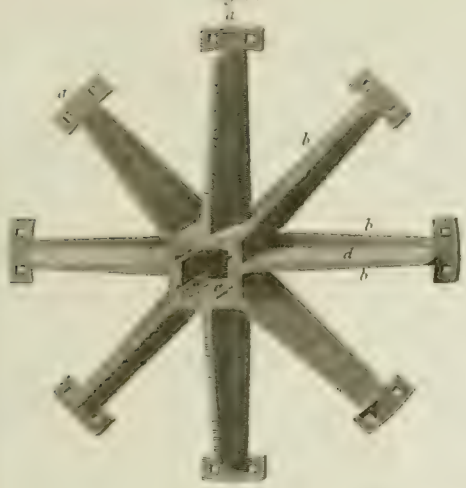


Fig. 2.

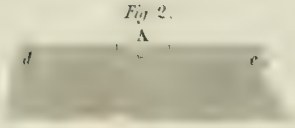


Fig. 3.

Fig. 4

Fig. 5.

Fig. 7.

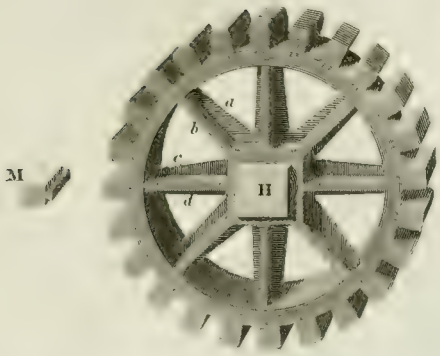


Fig. 8

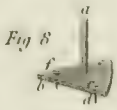


Fig. 6.

Fig. 9.

Fig. 10.

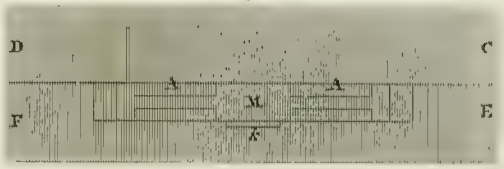
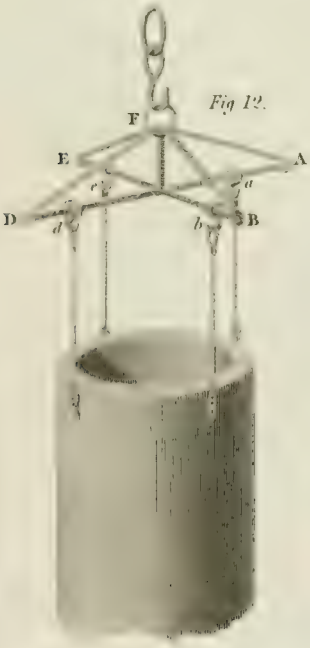


Fig. 11

Fig. 12.



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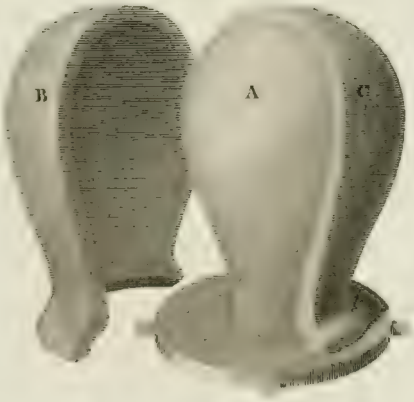

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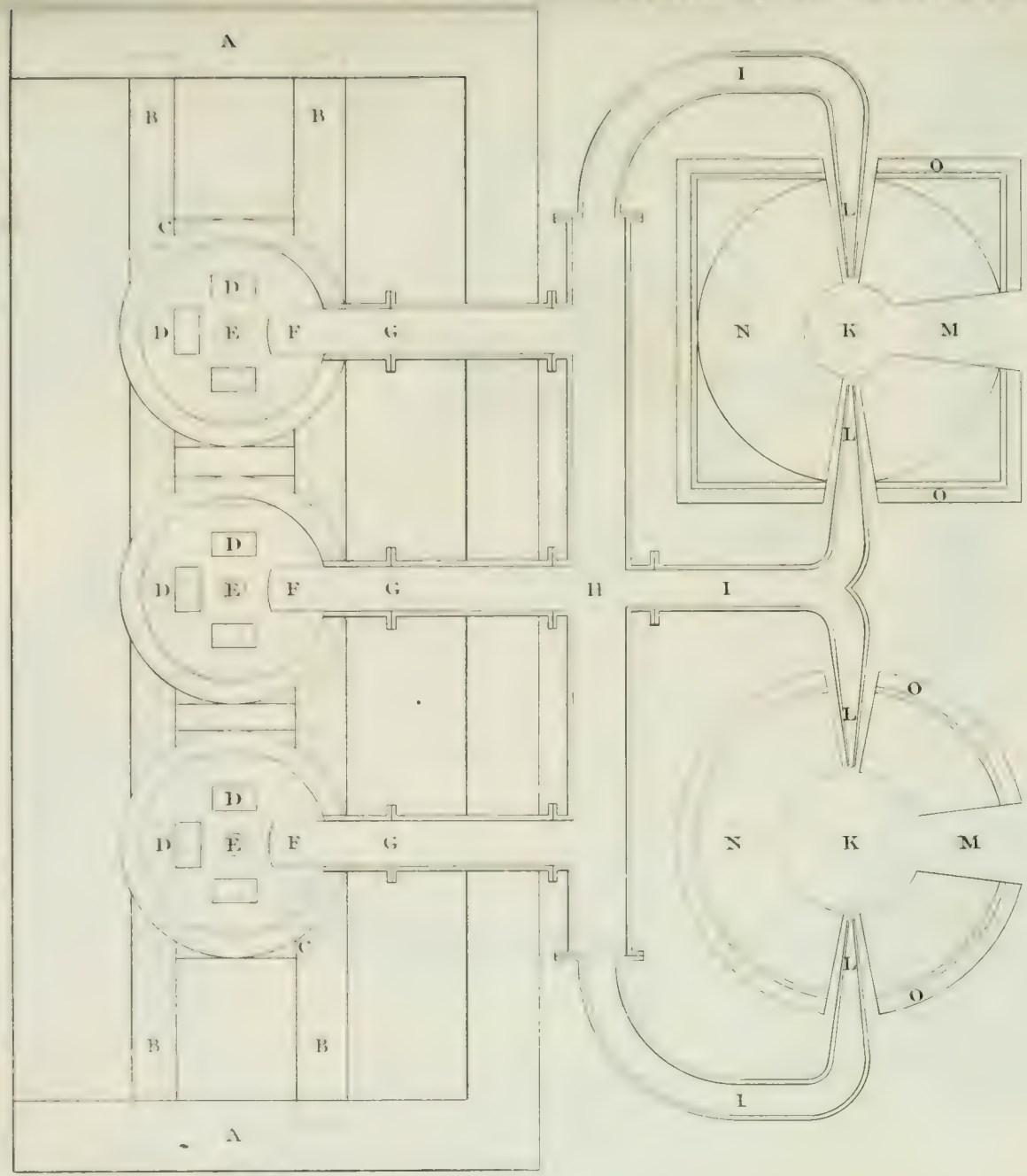
Fig. 1.

SECTION OF CUPILO FURNACE.



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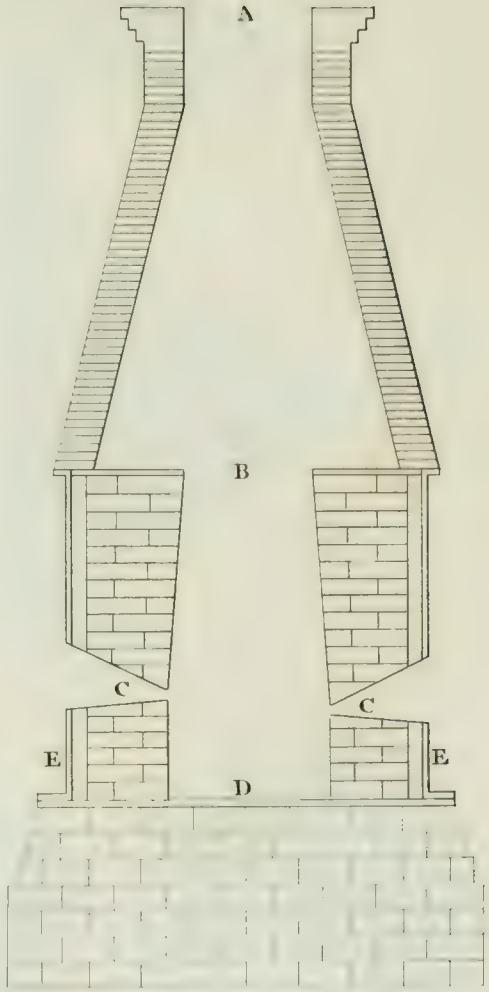

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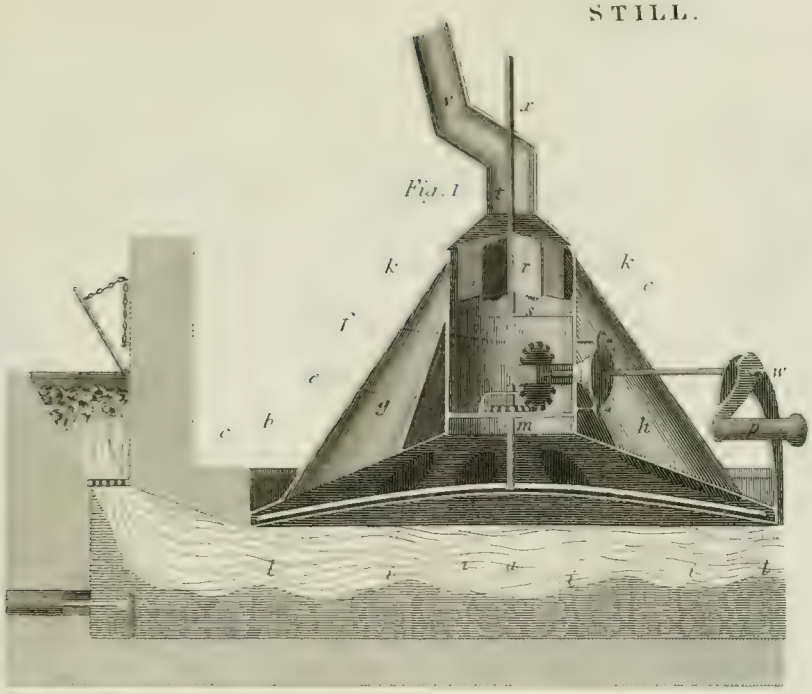
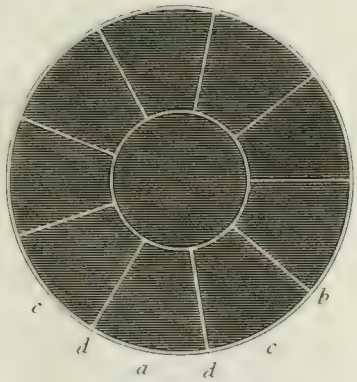
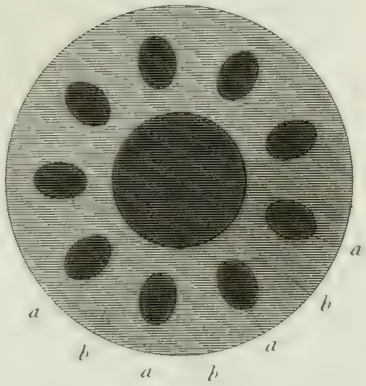
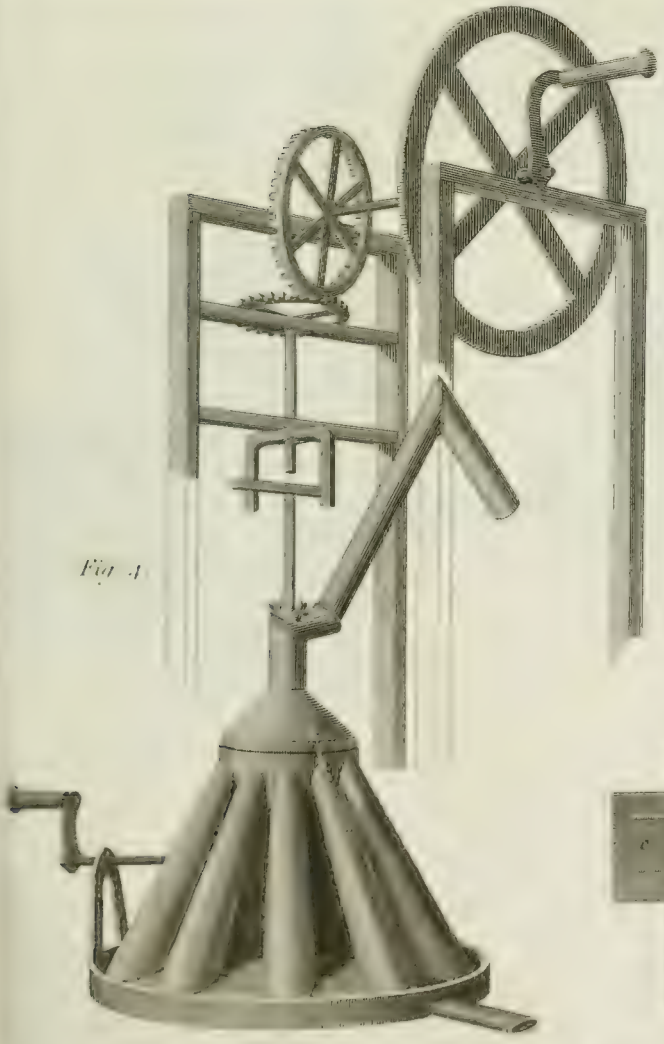
CHEMISTRY.

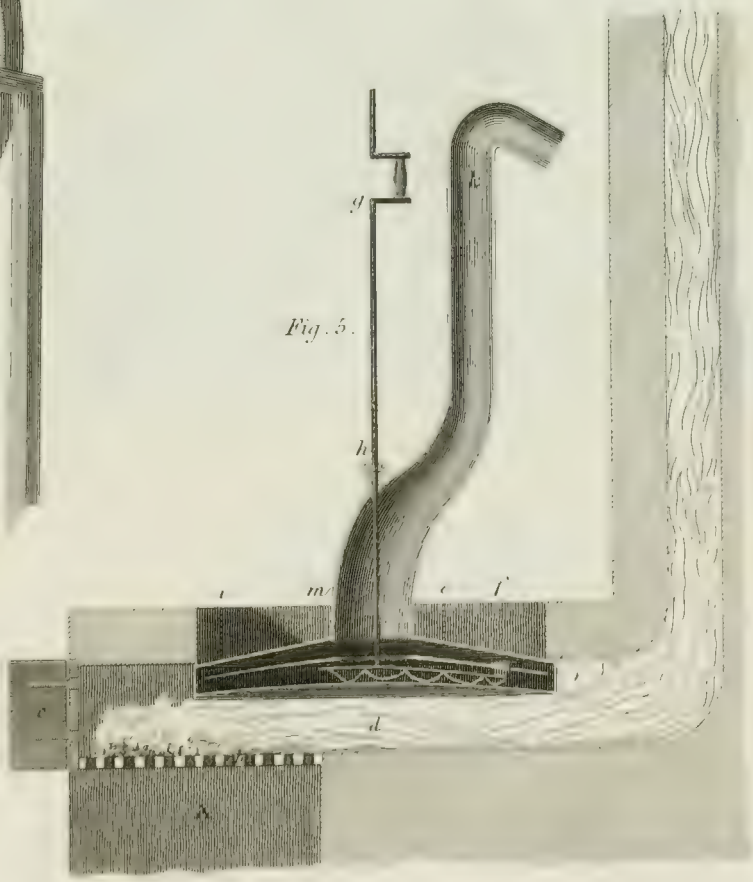
STILL.











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CHEMISTRY.

IRON SMELTING FURNACE

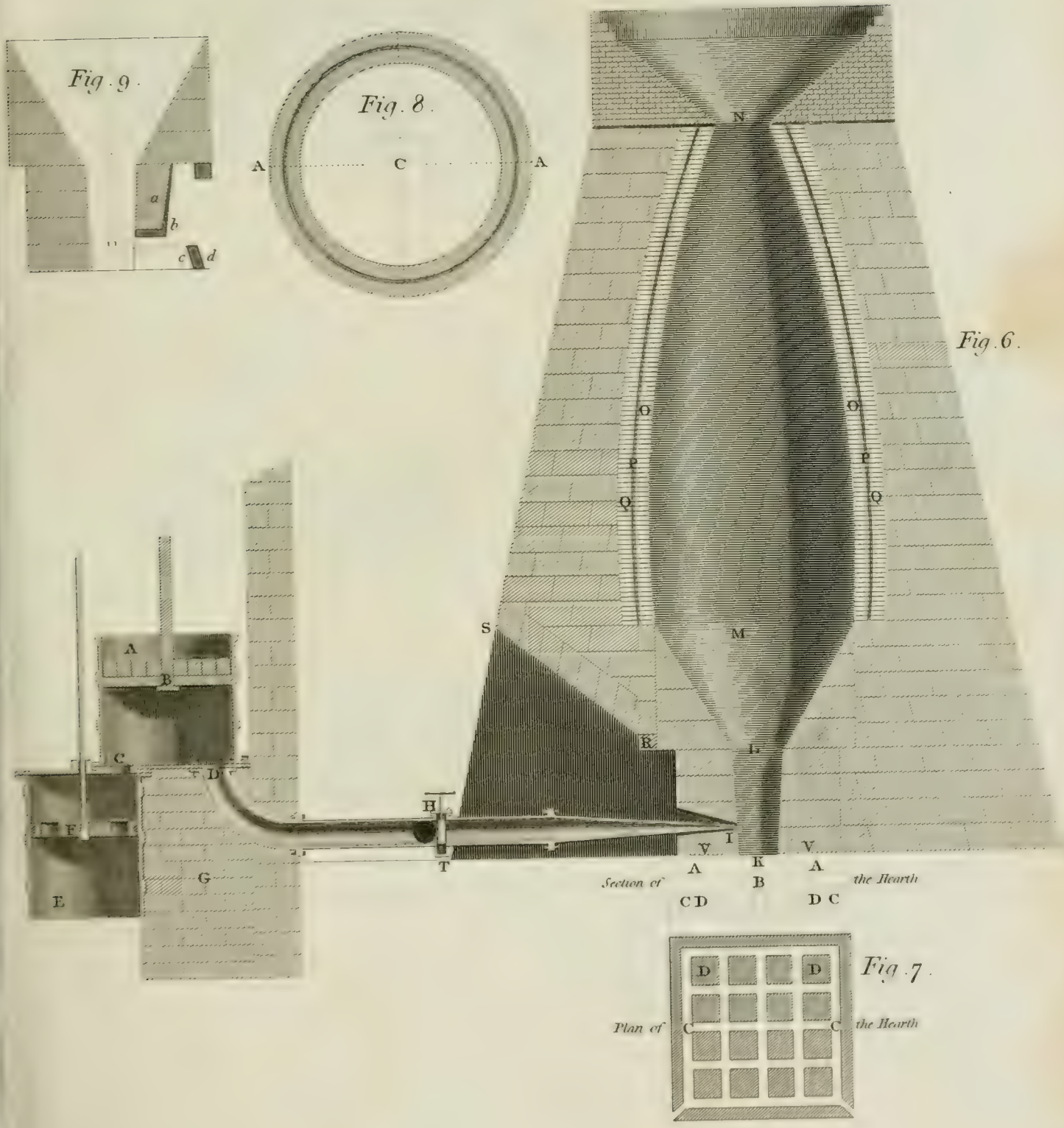

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Fig. 1.

Fig. 2.

ALEMBIC.

Fig. 3.

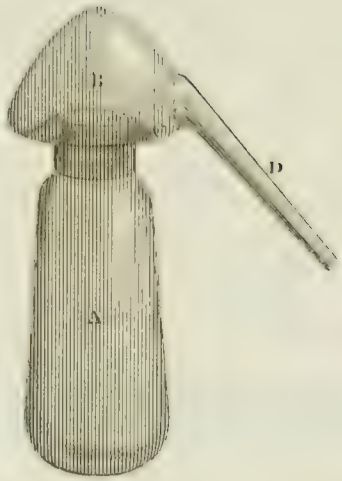
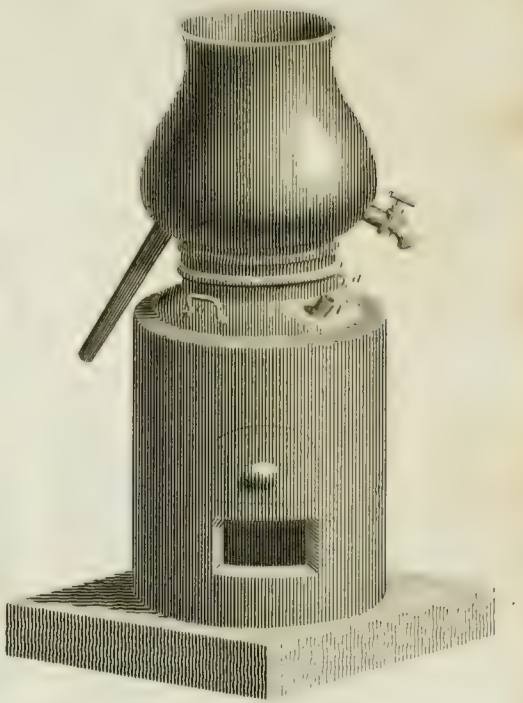
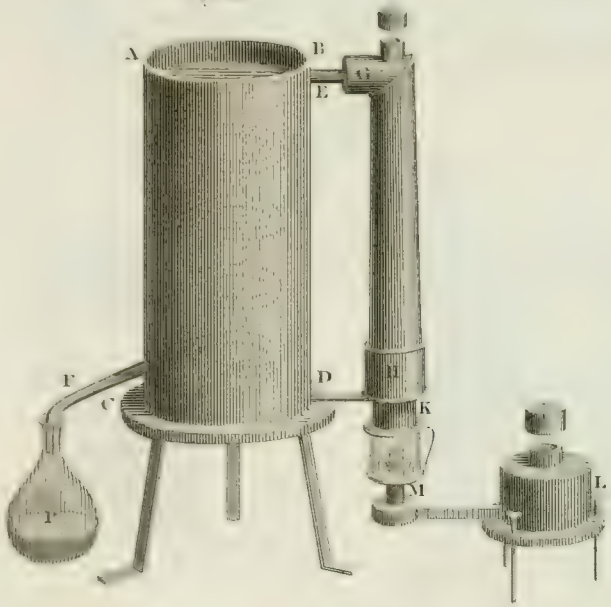


Fig. 5.



ALCOHOL.

Fig. 4.



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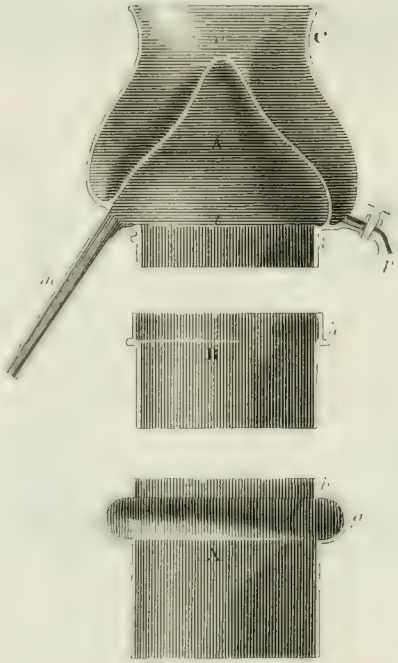
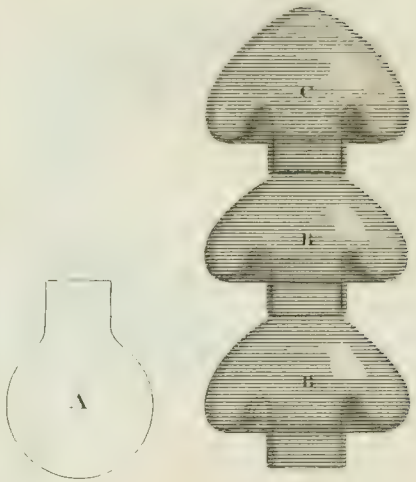


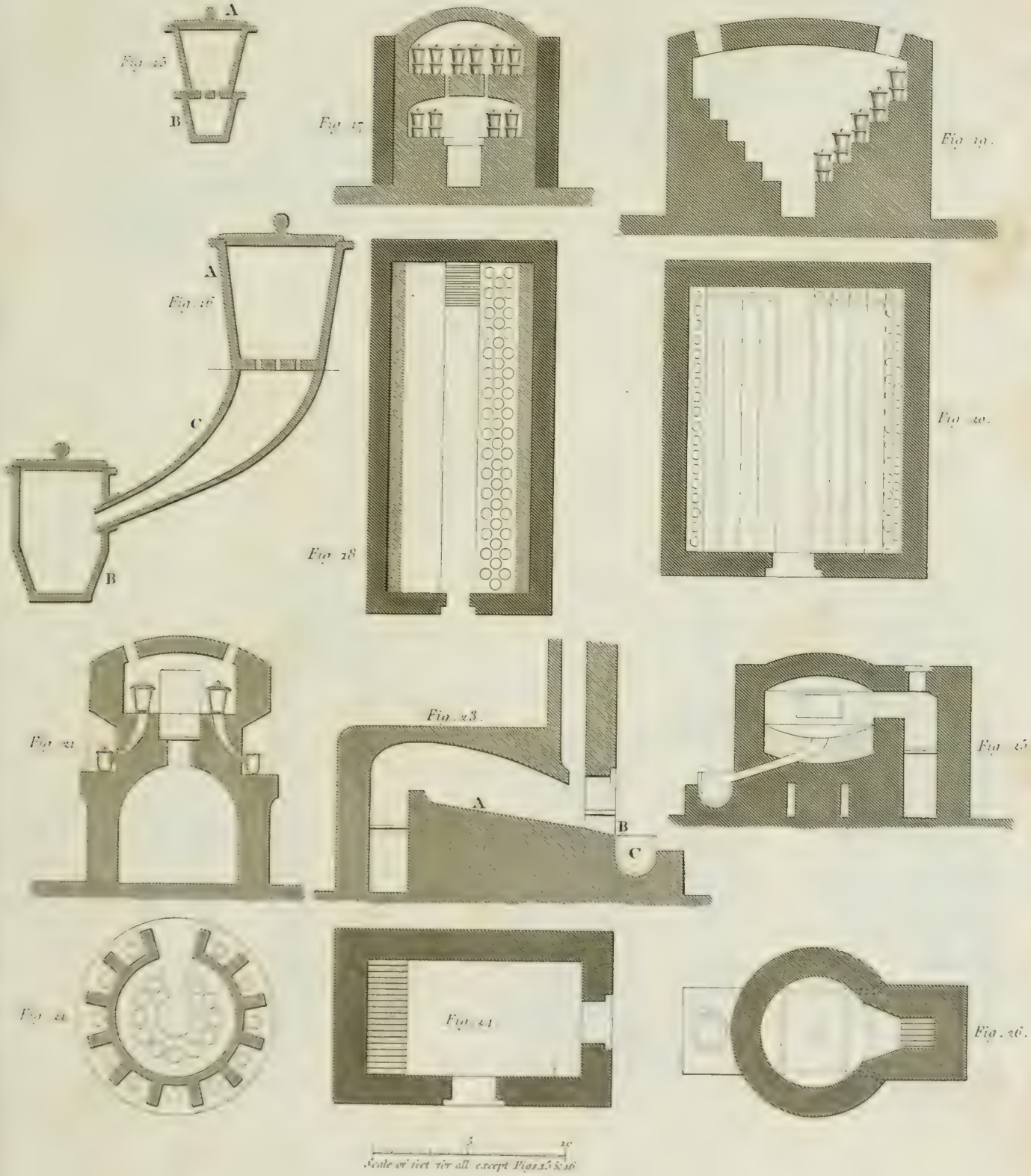
ALUDEL.

Fig. 7.



Engraved by Wilson Lizars

FURNACES FOR THE REDUCTION OF ANTIMONY.



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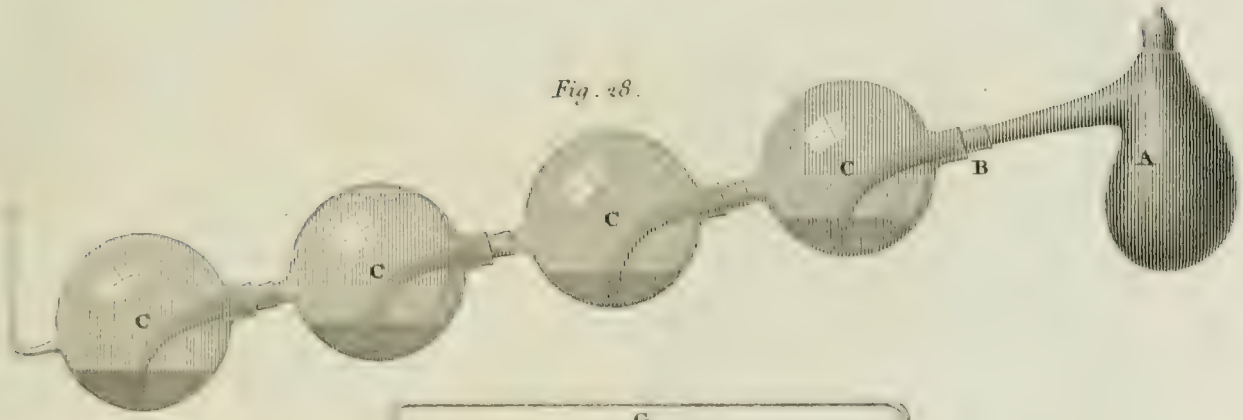
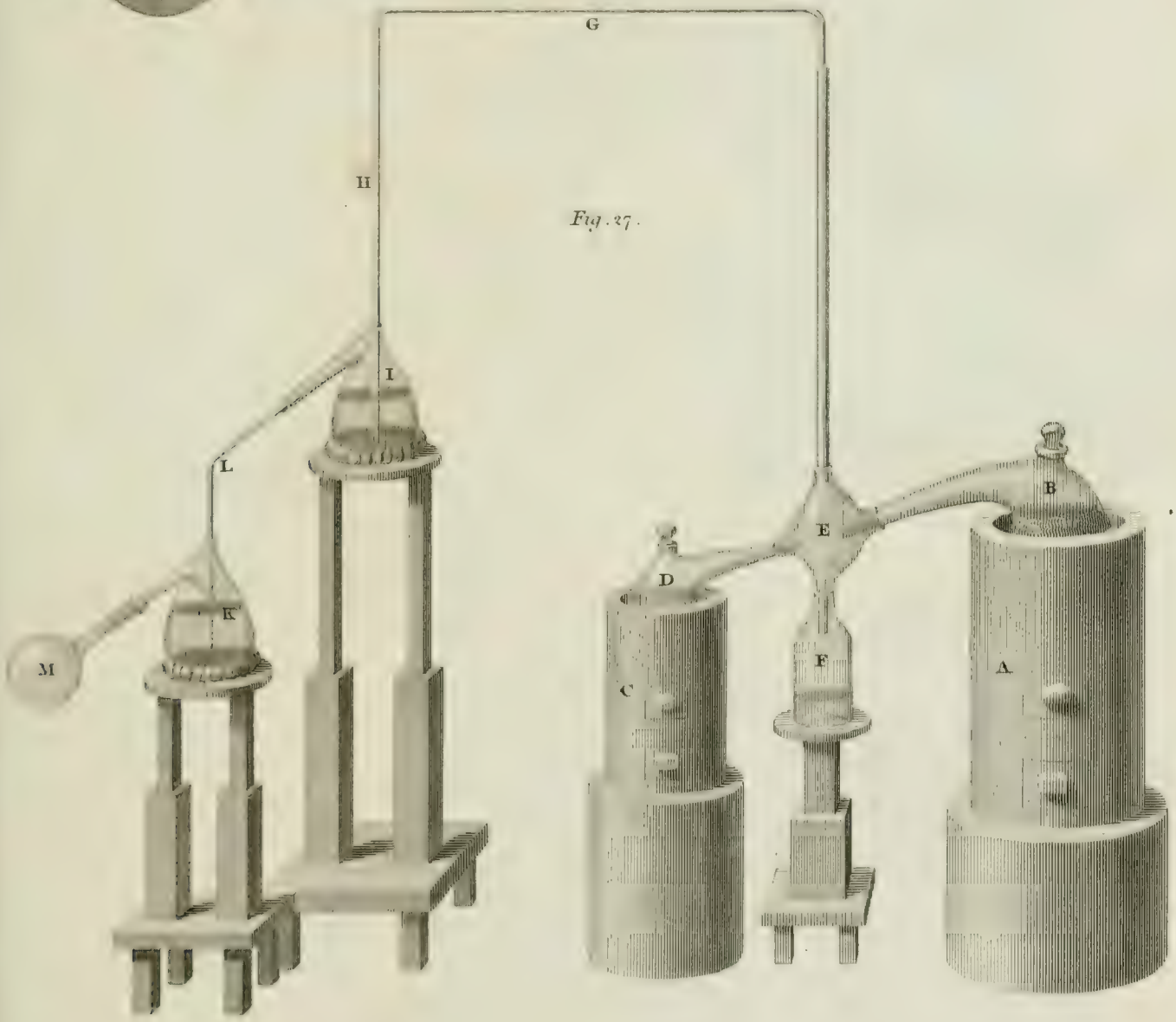
CHEMISTRY.

WOULFE'S APPARATUS.





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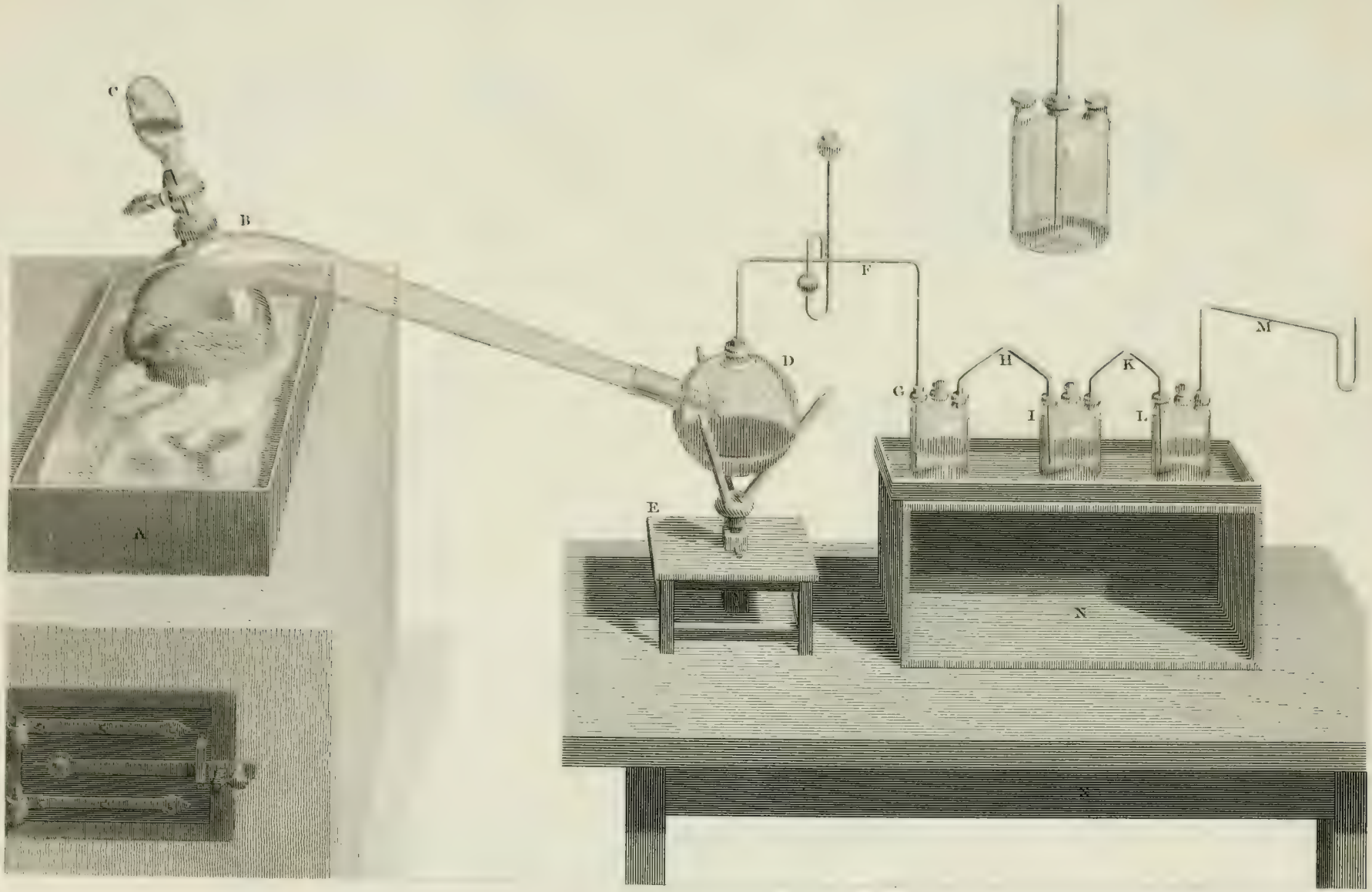
WOULFE'S APPARATUS.



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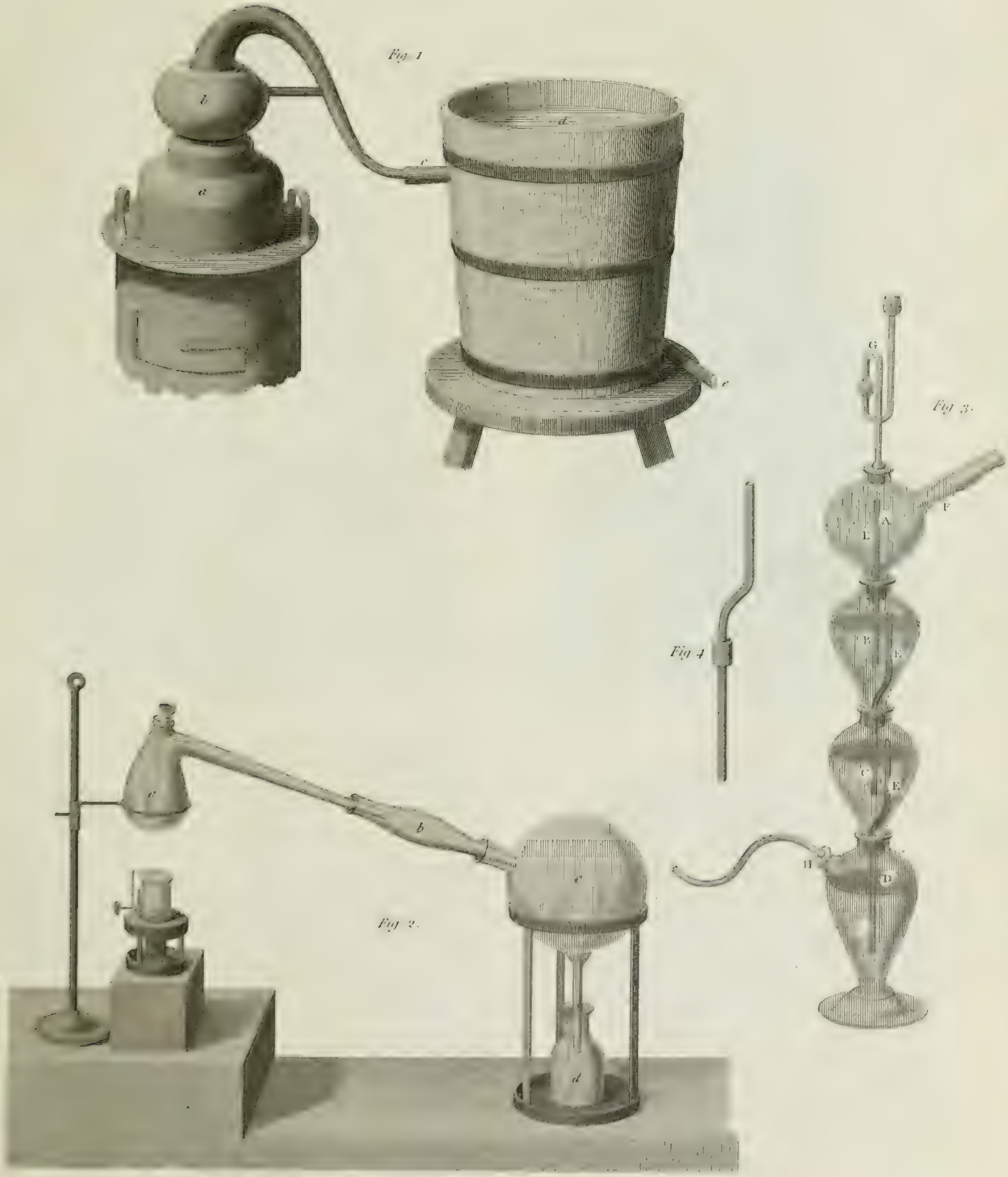
DISTILLATION.



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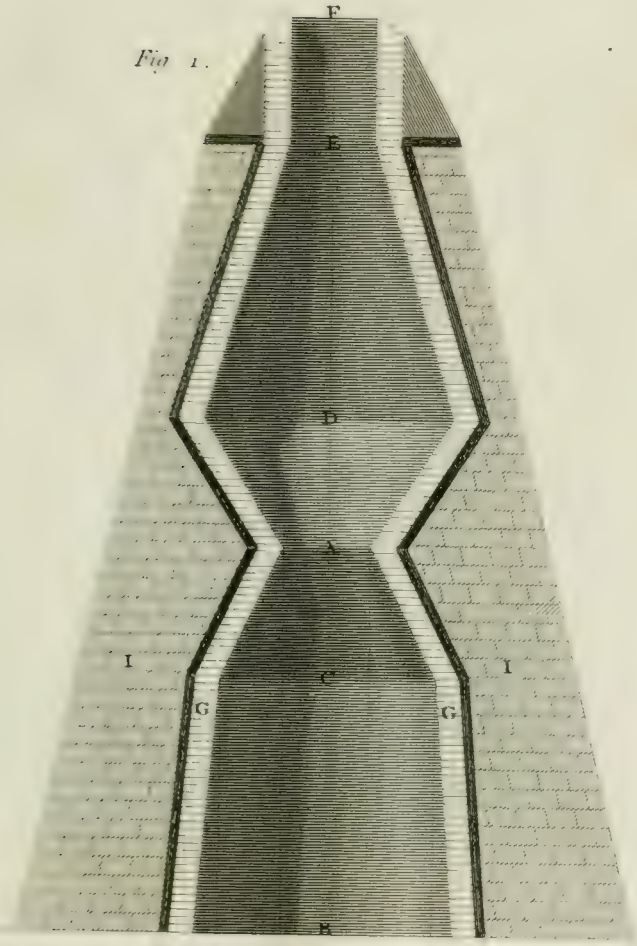
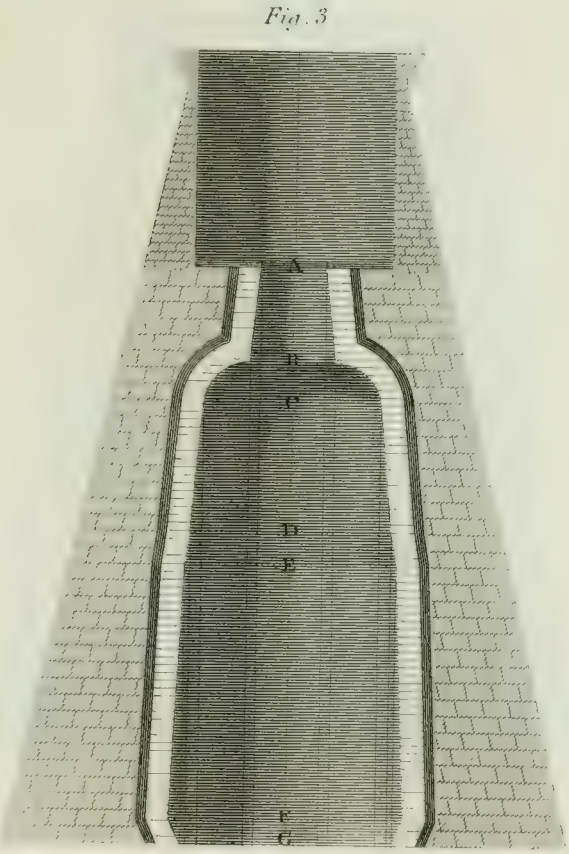
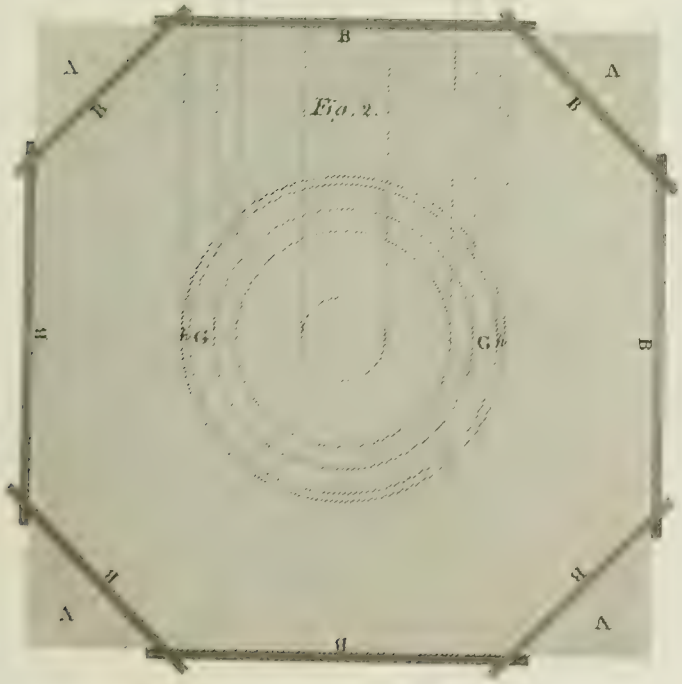
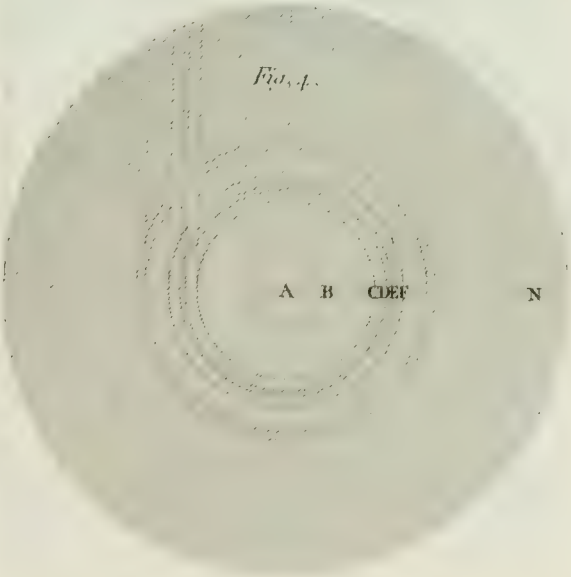
BLAST FURNACE.









D. Mushett

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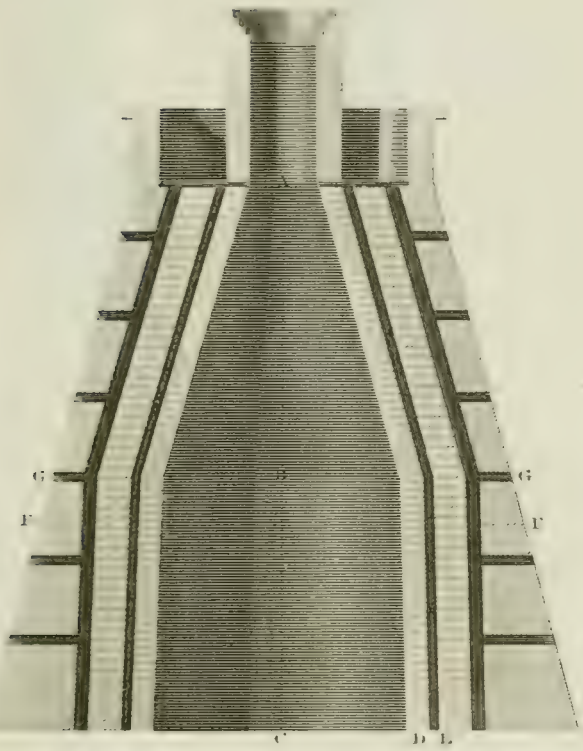
BLAST FURNACE.

Fig. 1



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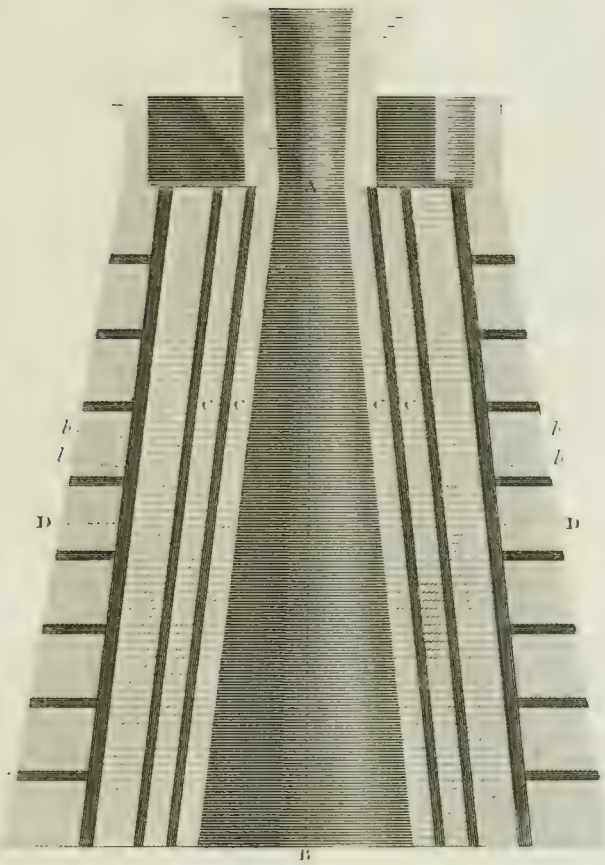


Fig. 2

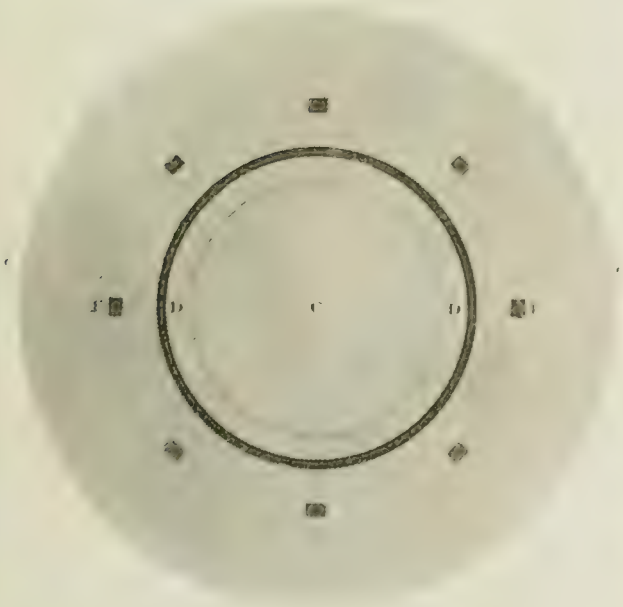
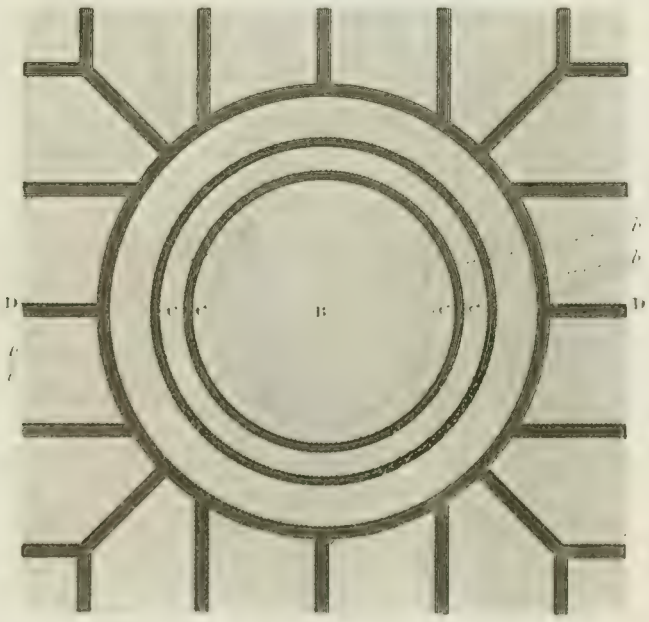


Fig. 4



BLAST FURNACE.

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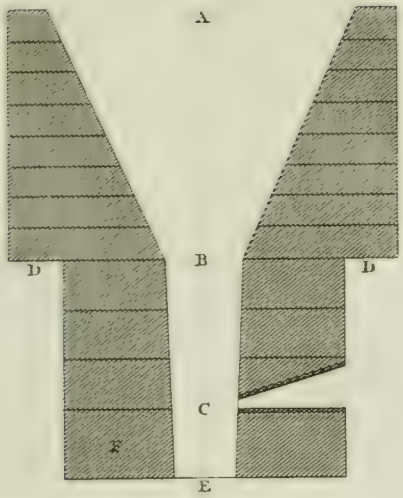


Fig. 4.

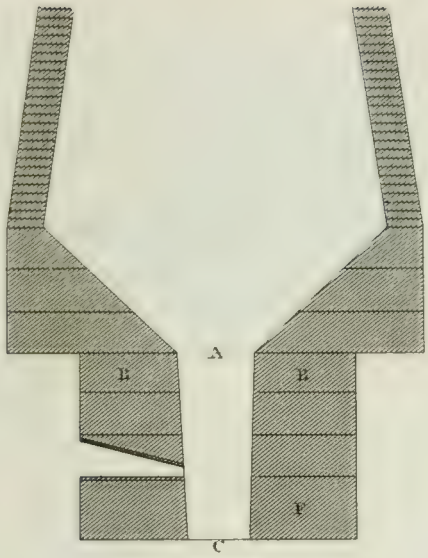
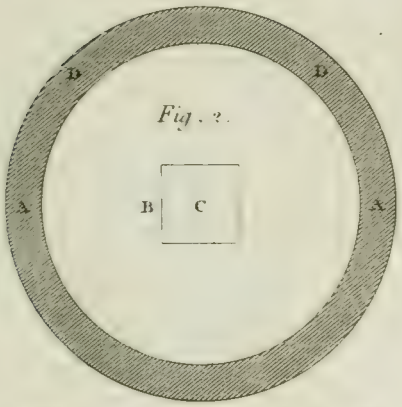


Fig. 2.



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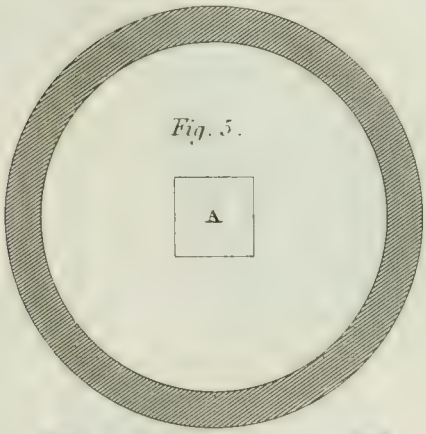
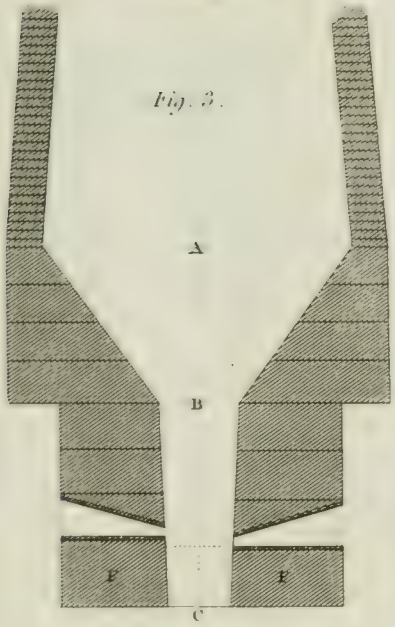


Fig. 3.



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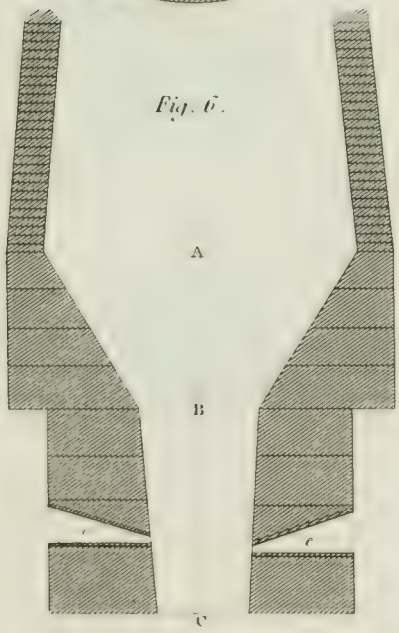

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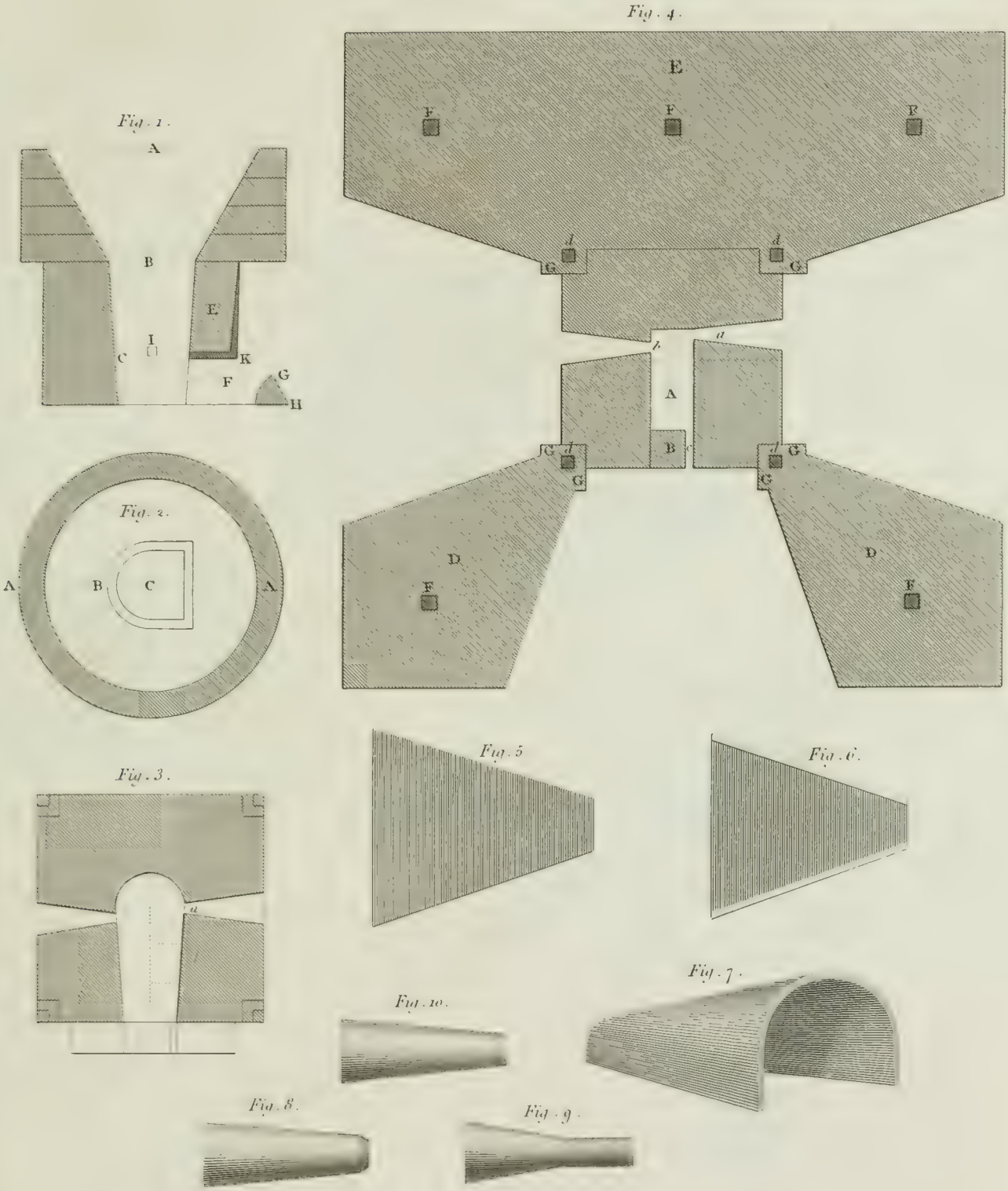
BLAST FURNACE.



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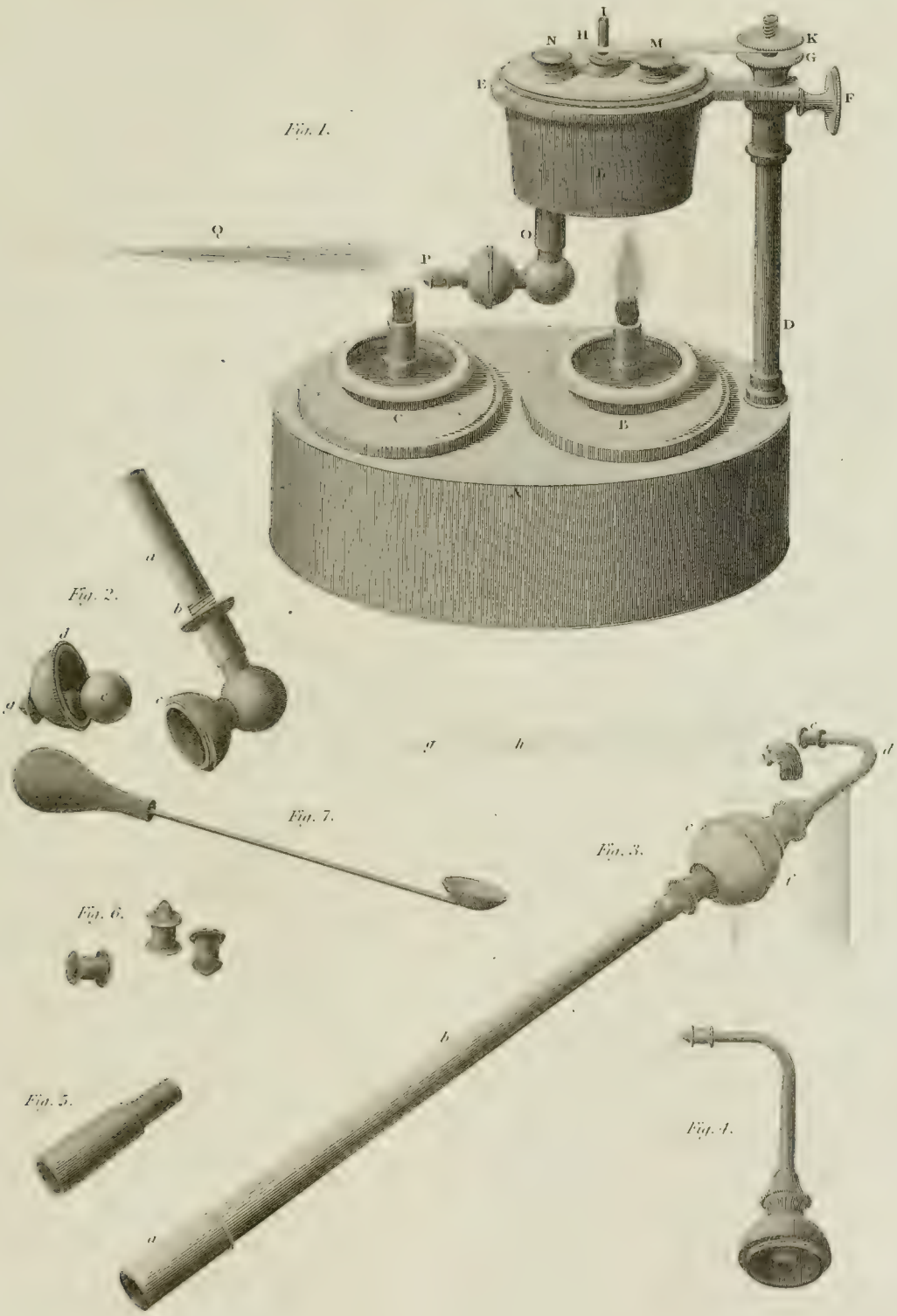
CHEMISTRY.

BLOWPIPE.



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ANCIENT CHEMICAL CHARACTERS.

ral & Miscellaneous terms

à à à. Amalgama
C. Calx
Caput mortuum
Finis
Pulvis
Q.E. Quinta Essentia
Spiritus
Regulus
Dies
Nox
Mensis
Hora

Instruments & processes

Crucibulum
Alembicum
Amphora
B Balneum
MB Balneum Mariæ

Retorta
Distillare
Precipitare
Sublimare
SSS. Stratum super Stratum

Substances

Aurum
Argentum
Ferrum
Cuprum
Antimonium
Argentum vivum
Stannum
Plumbum
Arsenicum
Auripigmentum
Cinnabaris
X Acetum - Acidum

Acetum distillatum
Nitrum - Natron
Vitriolum
Sal commune
Acidum vitriolicum
Acidum Nitri
Acidum Muriaticum
Aer
Aqua
Aqua fortis
Aqua regia
Ignis
Terra
Terra vitrifiabilis
Terra fusibilis
Vitrum
Argilla
Gypsum

Talcum
Arena
Calx viva
C C Cornu Cervi
Alkali
Alkali fixum
Alkali volatile
Alumen
Tartarus
Sal ammoniacum
Sal Gemmæ
Borax
Ærugo æris
Tutia
Sulphur
Urina
V Vinum
V Spiritus vini
OO Oleum

BERGMAN'S CHEMICAL CHARACTERS.

+ Acid
Alkali
Vitriol
Phlogiston
Dephlogisticated
Nitre
Sea salt
Aqua regia
F. Fluor
Borax
Sugar
Tartar
Sorrel
C. Lemon (Citrus)
Benzoe
Amber

Sugar of milk
Distilled vinegar
Milk
Ants (Formicæ)
Fat
Phosphorus
Prussian blue
V Fixed
Λ Volatile
v. Vegetable
m. Mineral - Mild
p. Pure
c Lime (Calx) Caustic
Barytes
Lime - Metallic calx
Magnesia

Clay
Silex
Water
Vital air
Matter of Heat
Sulphur
Spirit of wine
Ether
Essential oil
Expressed oil
Gold
Platina
Silver
Mercury
b Lead
Copper

Iron
Tin
Bismuth
Nickel
Arsenic
Cobalt
Zinc
Antimony
Manganese

Examples of Combination

v p Pure fixed vegetable alkali
v Vitriolated fixed - - vegetable alkali
Calx of Iron
Mercury sublimate
Dephlogisticated Muriatic acid

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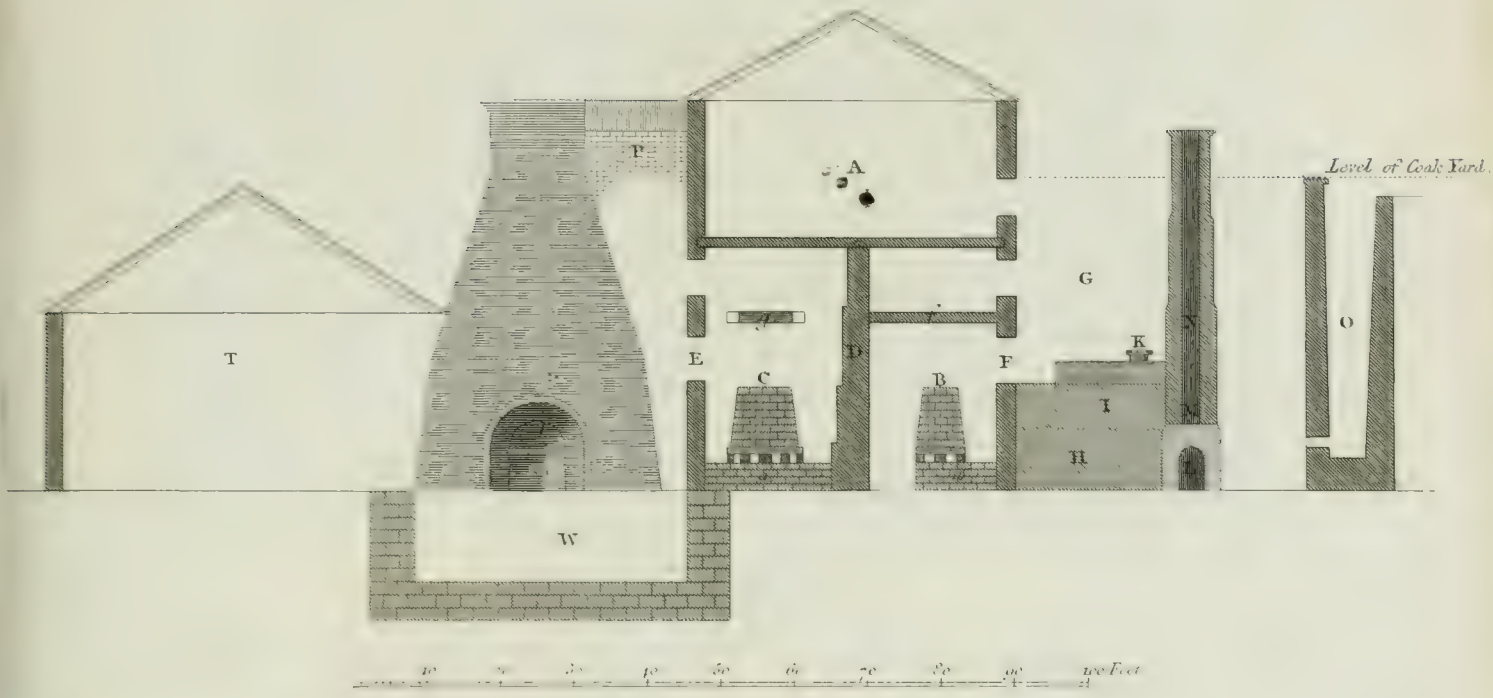
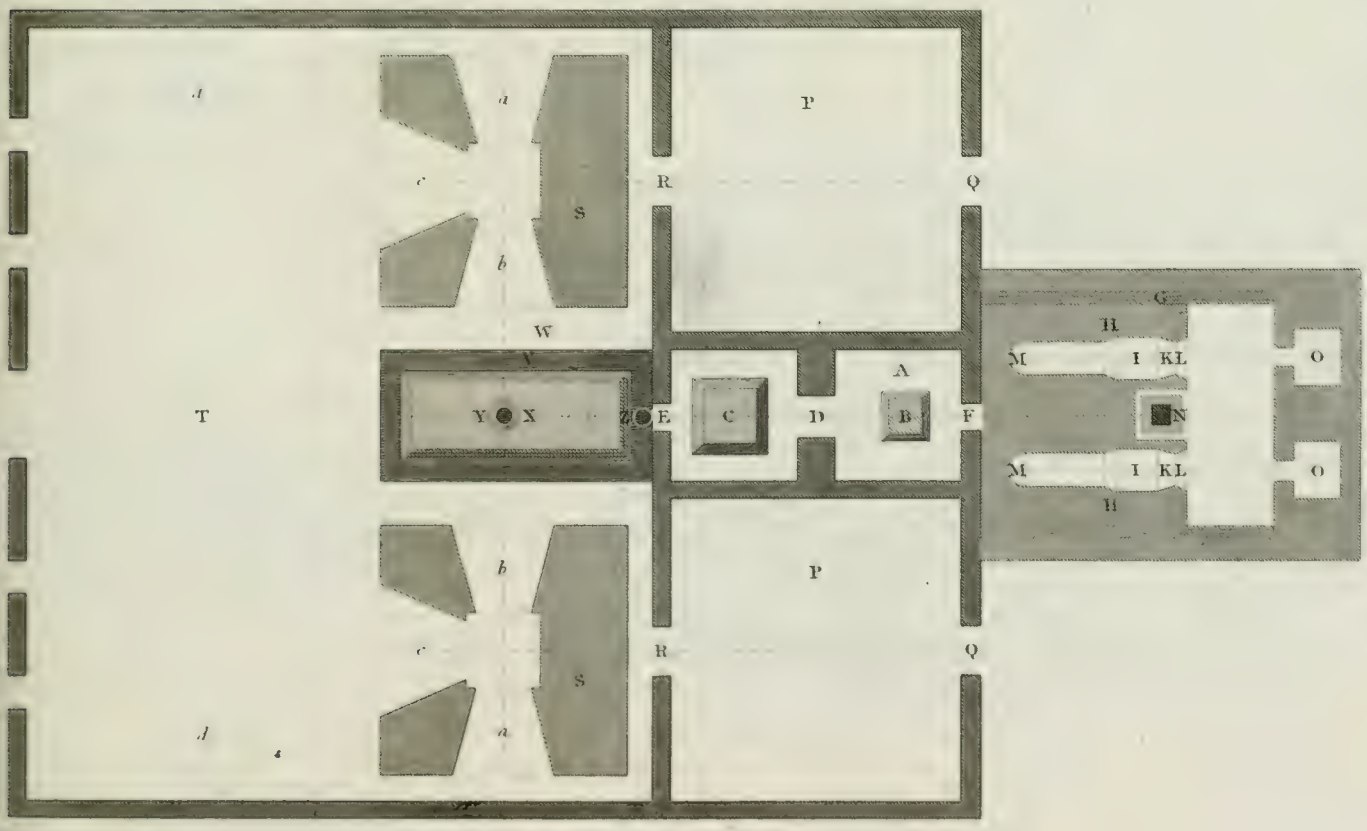
CHEMISTRY.

BLAST FURNACE WORKS.





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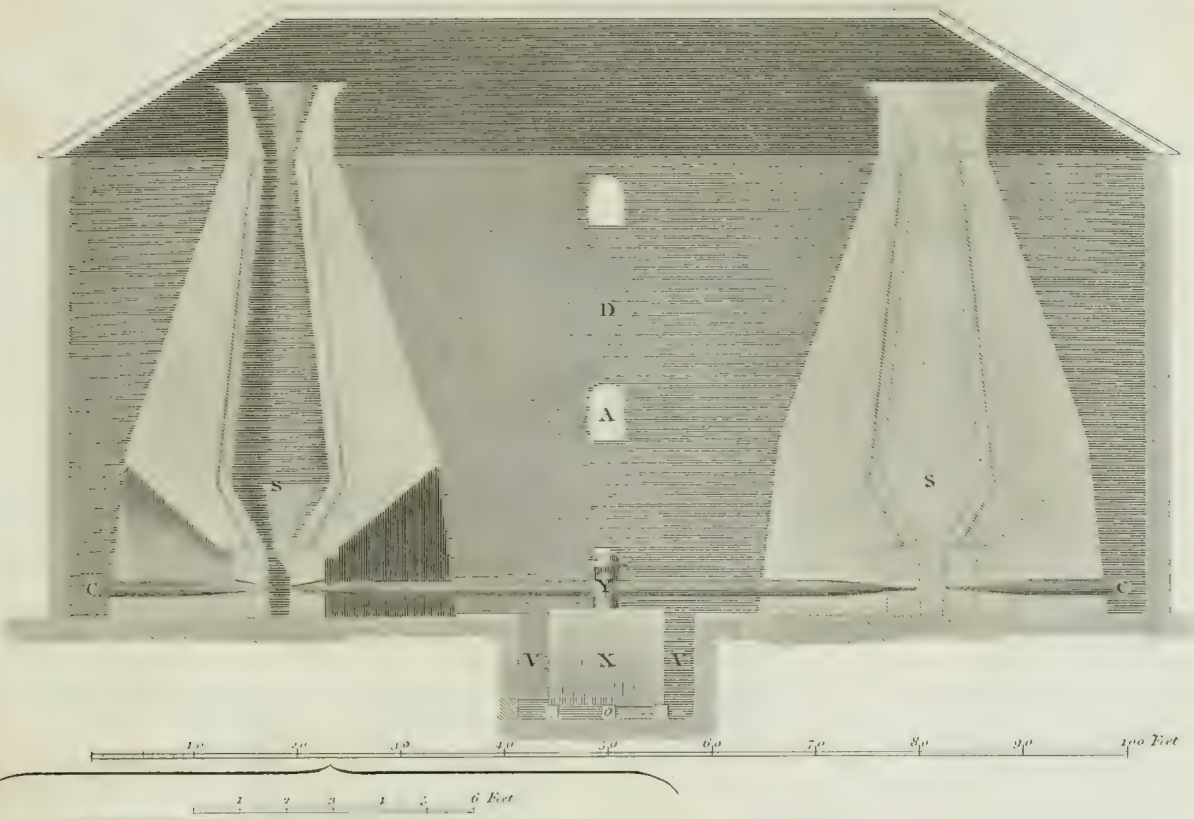
BLAST FURNACE WORKS.



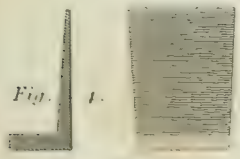


Fig. 4.

Tymp Plate

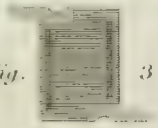


Fig. 3.

Dam Plate

Fig. 2.

Dam Stone

Fig. 1.

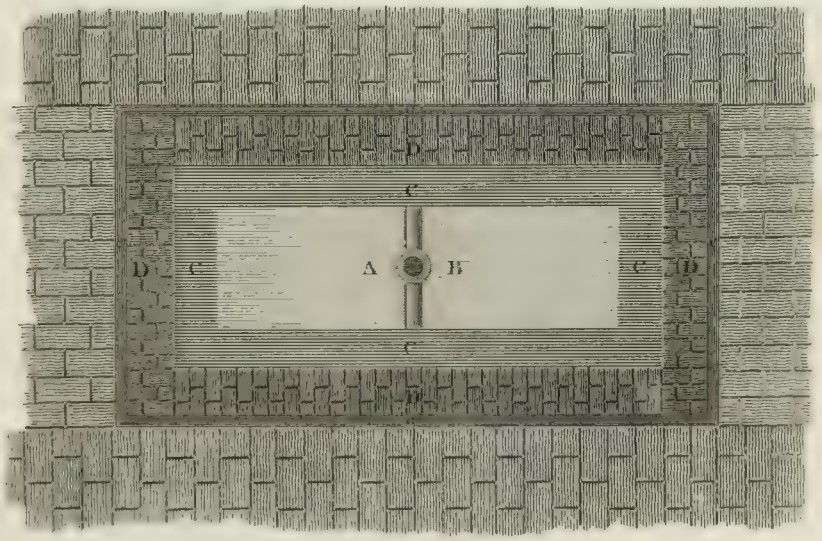
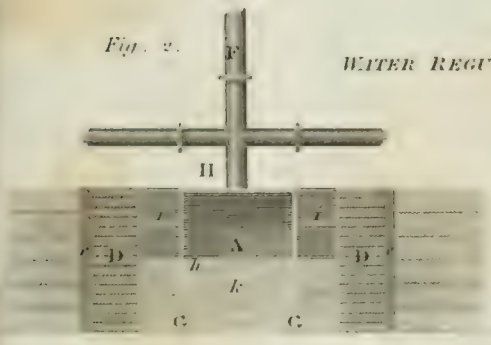


Fig. 2.

WATER REGULATOR



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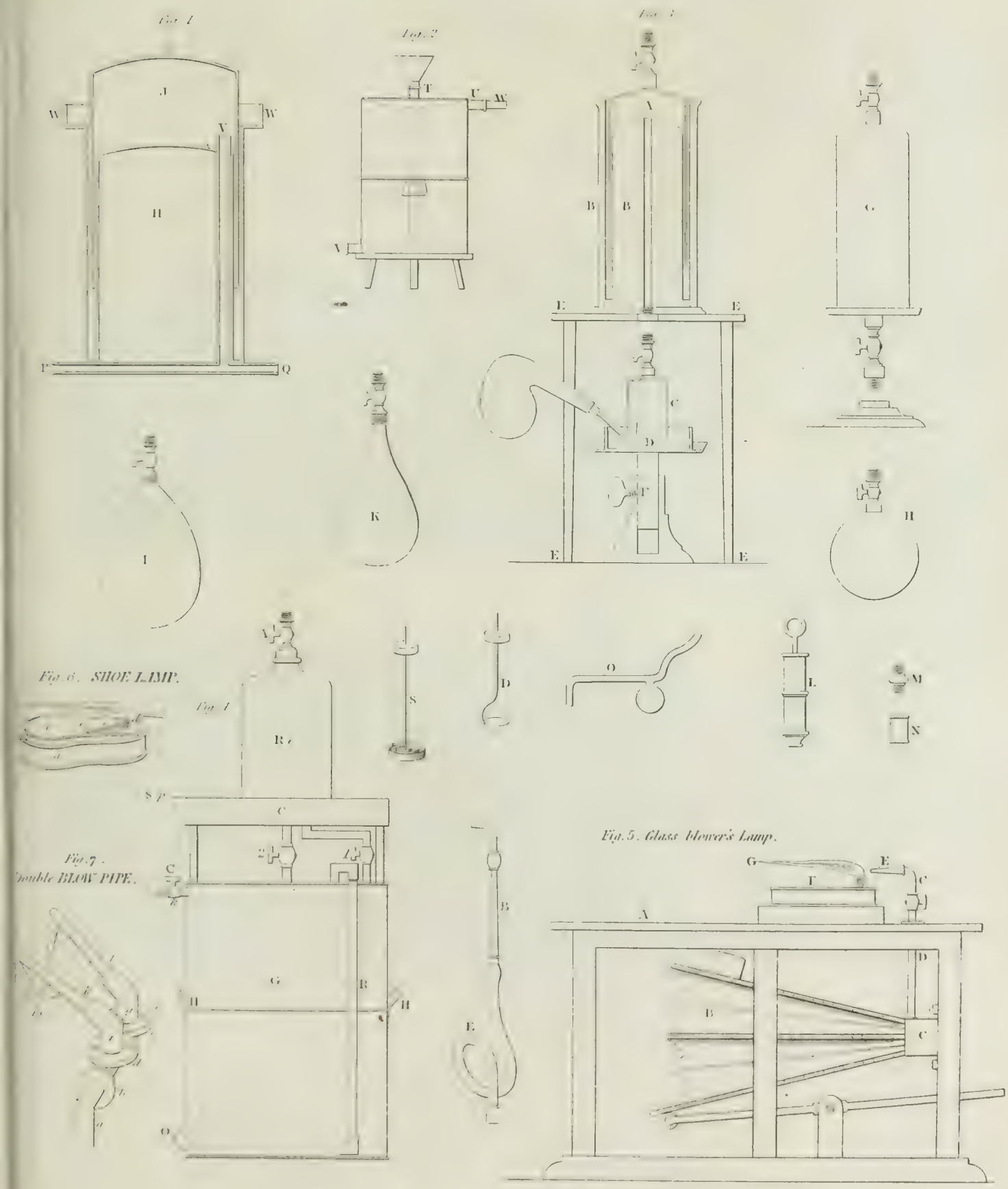
GAZOMETER & BLOW PIPE.



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CHEMISTRY.

AIR VAULT.

Fig. 1

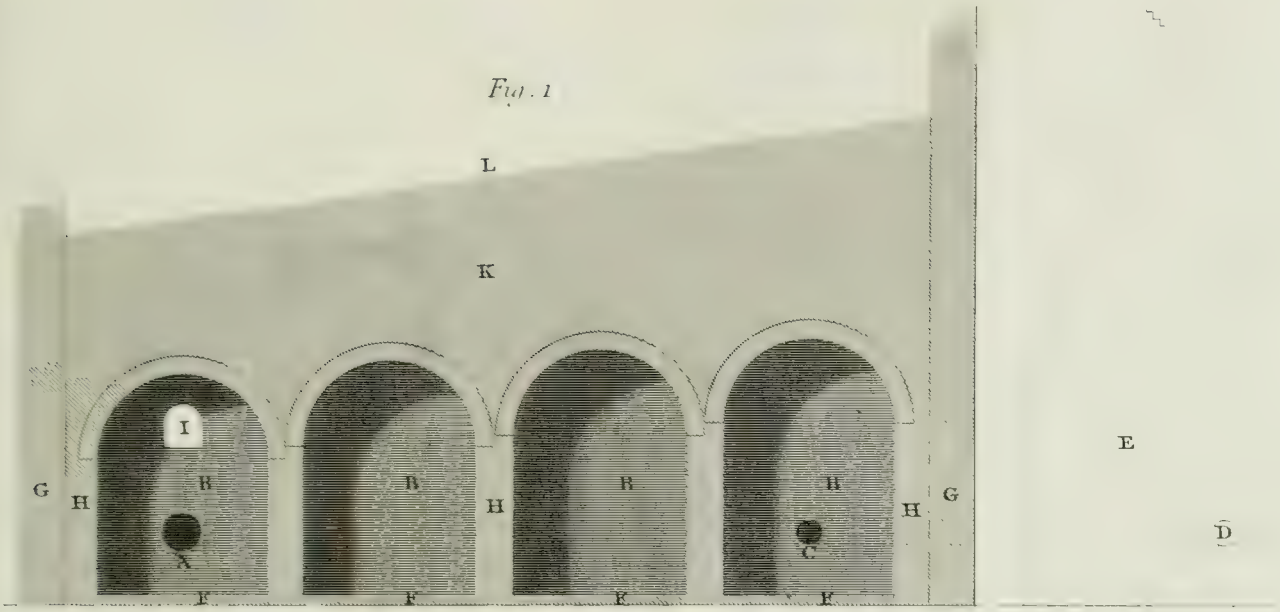
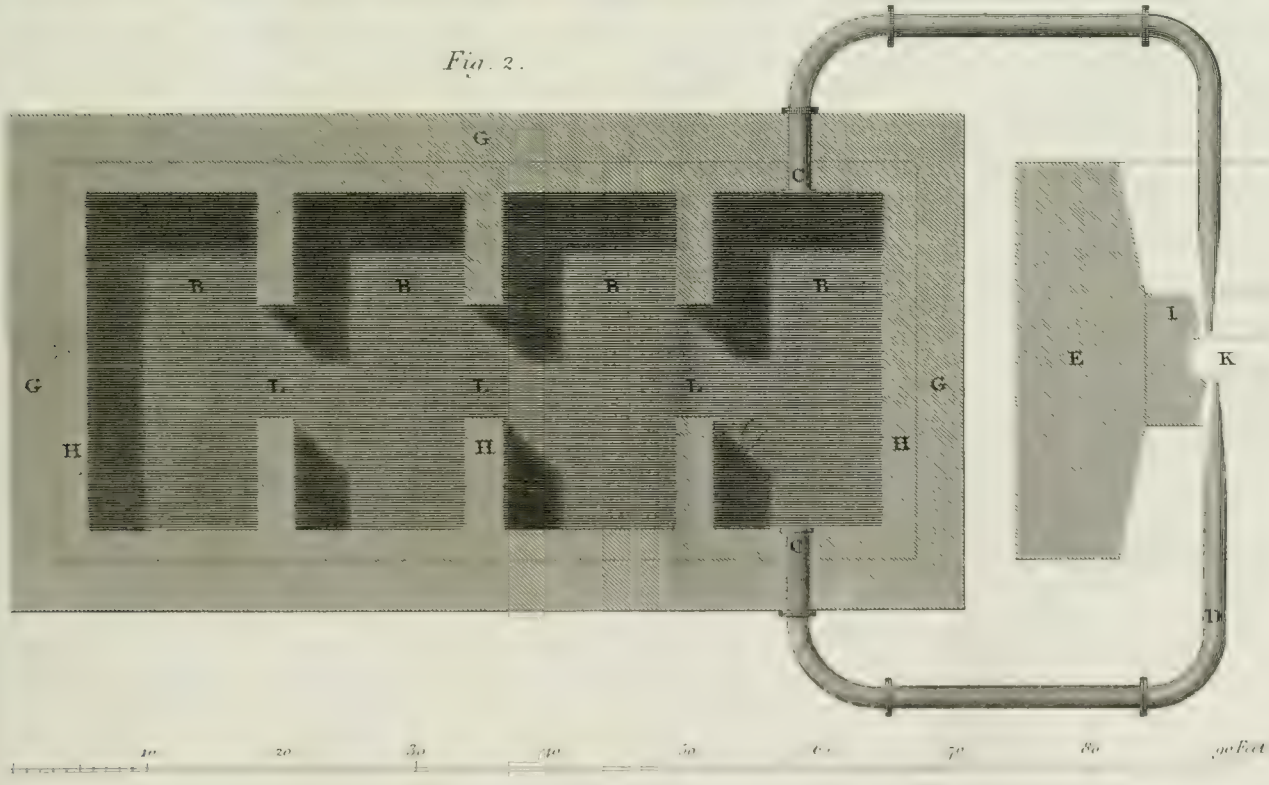


Fig. 2.



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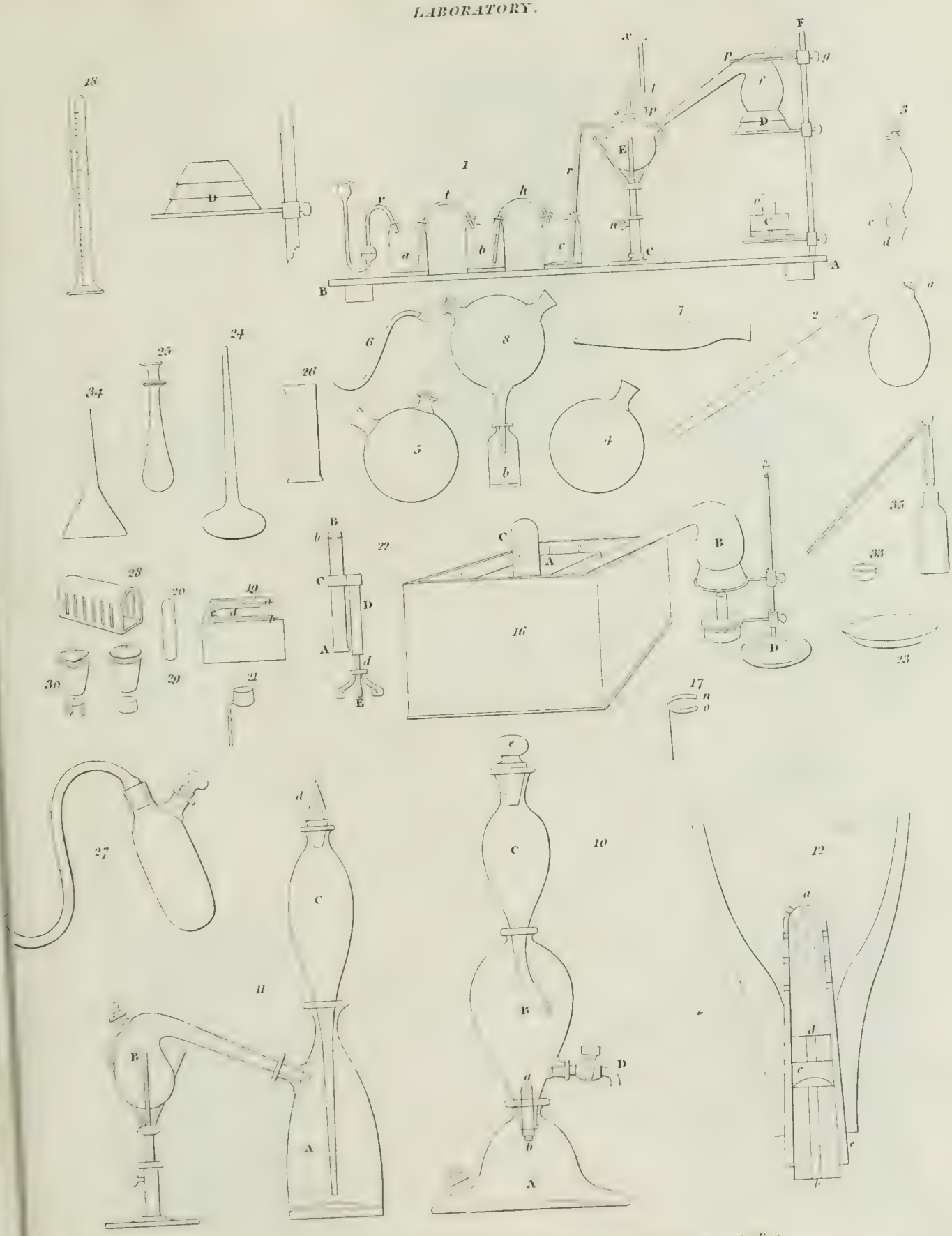
CHEMISTRY.

LABORATORY.



W. Lowry sculp.

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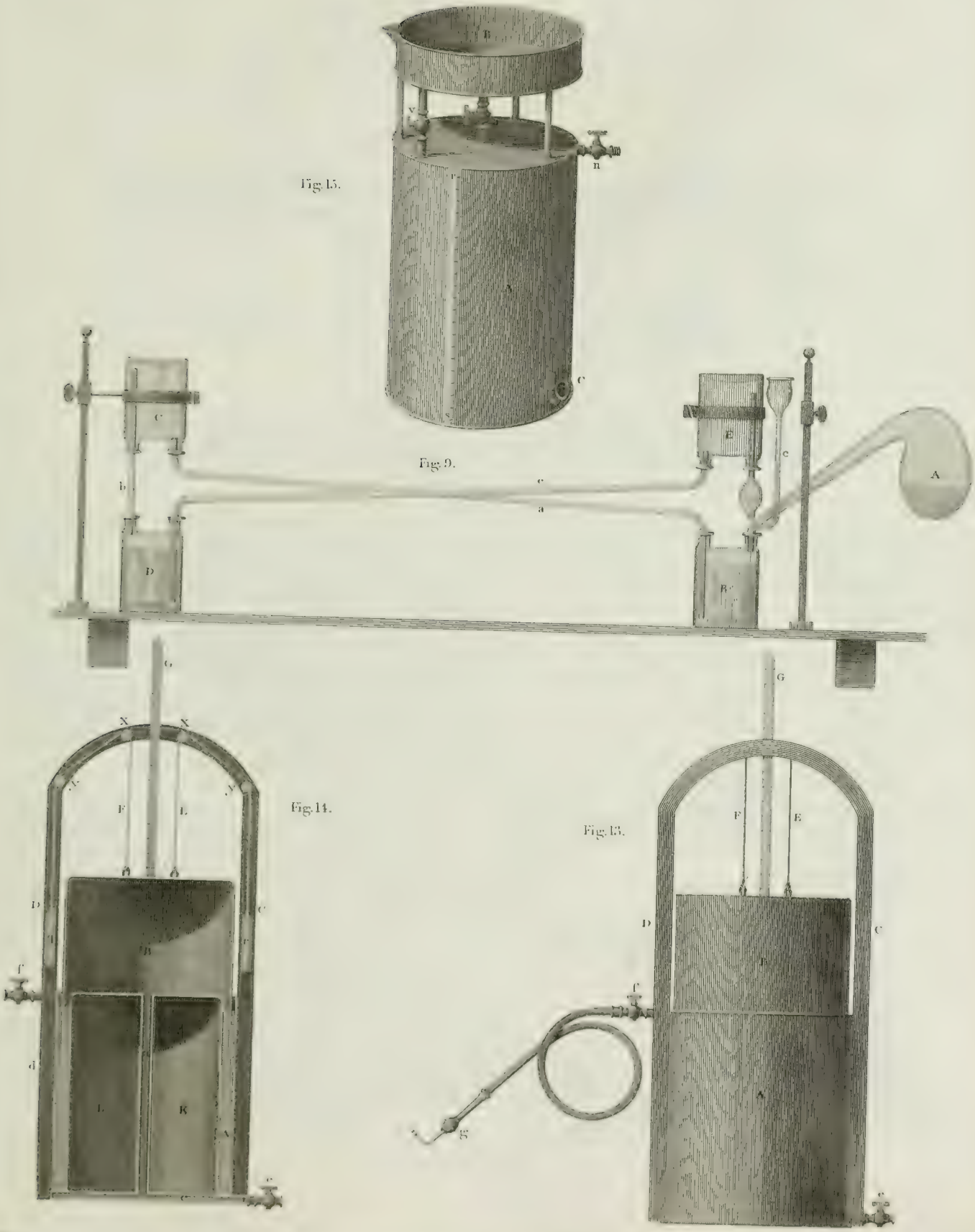
W. Duesbury del.

CHEMISTRY.

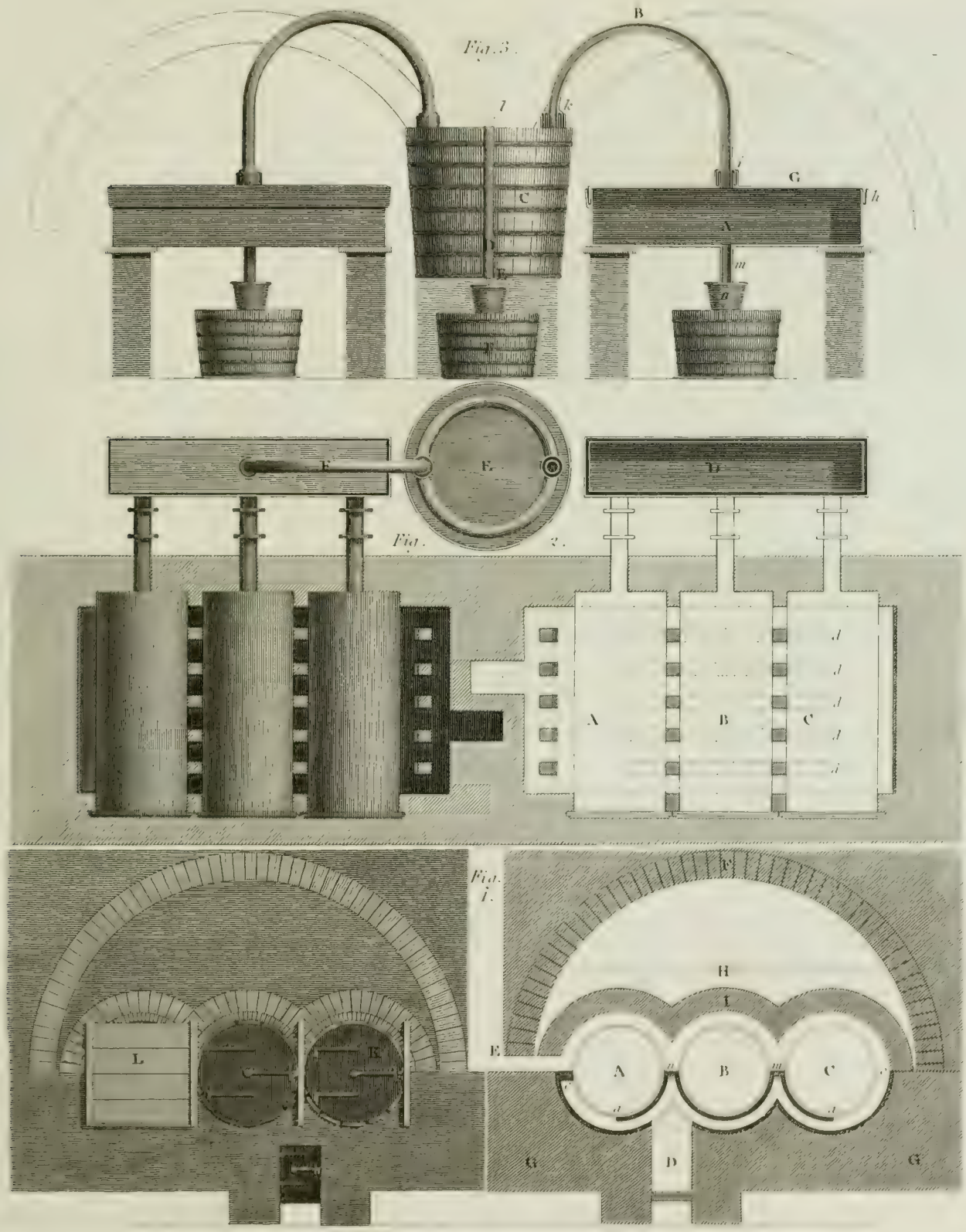
LABORATORY.

PLATE XVII.



Published as the Act directs, 1812, by Longman Hurst [illegible] Lowry sculp.

APPARATUS FOR THE DISTILLATION OF PYROLIGNEOUS ACID.



Drawn by William Thomson. Published as the Act directs, Aug. 1 [illegible] Paternoster Row. Engraved by Wilson Lowry

Gay Lussac & Thenard's Apparatus.

Fig. 3

Hope's Eudiometer

Fig. 1

Berzelius's Apparatus

Fig. 4

Pepys's improvement of Volta's Eudiometer

Fig. 2

ANALYSIS of Organic Substances.

Dr. Wollaston's Scale of Chemical Equivalents.

Fig. 6.

CHEMICAL		EQUIVALENTS.
	10	
	11	
	12	
	13	
Oxygen	14	Abbreviations.
		d. dry.
Water	15	c crystallized.
	16	Ox. Oxid.
	17	Carb. Carbonate.
10 Hydrogen	18	M. Muriate.
	19	N. Nitrate
	20	S. Sulphate.
		W. Water.
	22	
Phosphorus	24	Azote
	26	
2 Oxygen	28	Sulphur
		Ammonia
	30	2 Water
	32	
Calcium	34	Magnesia
	36	
	38	Carbonic acid
Sodium 3 Oxygen	40	
Iron	45	Muriatic acid (d)
		Lime
Phosphoric acid	50	Nitrous gas
		Soda
Copper	55	Zinc
Chlorine	60	Ox. Iron
Muriatic gas		Sub. Carb. Ammonia
Oxalic acid	65	Potassium
Sulphuric acid		Red Ox. Iron
3 Oxygen		Ox. Zinc
Ox. Copper	70	
2 Carbonic acid	75	
		5 Water
6 Oxygen	80	Potash
Oil of Vitriol (S 6 + 3 W)	85	Carb. Lime
(d) Nitric acid	90	Sub. Carb. Soda (d)
Strontia	95	M. Ammonia
		M. Lime (d)
10 Carbon	100	M. Soda
Bi Carb. Ammonia		S. Magnesia (d)
	110	7 Water
		S. Lime (d)
Sub. Carb. Potash	120	S. Soda (d)
Liquid Nitric acid (N 6 + 30)		M. Potash
Barytes	130	
(d) N. Lime	140	Bi-Carb. Soda
N. Soda		Selenite (2 W c)
S. Potash	150	10 Water
S. Strontia	160	
Bi-Carb. Potash		Carb. Barytes
Mercury	170	N. Potash
Lead		
Silver	180	M. Barytes (d)
		Red Oxid ☿
Litharge	190	
Ox. Silver	200	S. Barytes
Bin Oxal Potash		S. Magnesia (c 7 W)
Oxalate M. Potash		
(c 3 W) S. Copper	220	N. Barytes
Corrosive Sublimate		Carb. Lead
Phosph. Lead	240	S. Iron (c 7 W)
Mur. Silver		M. Lead
		S. Zinc (c 7 W)
S. Lead	260	Oxalate Lead
(c 10 W) S. Soda	280	N. Lead
	300	
	320	
2 Mercury Protoxid ☿		Calomel (2 ☿)

Fig. 5.

CHEMICAL		EQUIVALENTS.
Oxygen	10	Abbreviations
		d. dry.
Water	11	c. crystallized.
	12	Ox. Oxid.
		Carb. Carbonate.
10 Hydrogen	13	M. Muriate.
	14	N. Nitrate
	15	S. Sulphate
	16	W. Water.
Phosphorus	17	Azote
	18	
	19	
2 Oxygen	20	Sulphur
		Ammonia
	22	2 Water
	24	
Calcium		Magnesia
	26	
	28	Carbonic acid
Sodium 3 Oxygen	30	
	32	
Iron	34	Muriatic acid (d)
		Lime
Phosphoric acid	36	Nitrous gas
	38	Soda
Copper	40	Zinc
Chlorine		Ox. Iron
Muriatic gas	45	
Oxalic acid		Sub. Carb. Ammonia
Sulphuric acid		Potassium
3 Oxygen	50	Red Ox. Iron
Ox. Copper		Ox. Zinc
2 Carbonic acid	55	
		5 Water
6 Oxygen	60	Potash
Oil of Vitriol (S 6 + 3 W)		Carb. Lime
(d) Nitric acid	65	Sub. Carb. Soda (d)
Strontia		M. Ammonia
	70	M. Lime (d)
		M. Soda
10 Carbon	75	S. Magnesia (d)
Bi-Carb. Ammonia		
	80	7 Water
Sub. Carb. Potash	85	S. Lime (d)
Liquid Nitric acid (N 6 + 30)	90	S. Soda (d)
		M. Potash
Barytes	95	
N. Lime	100	
N. Soda		Bi-Carb. Soda
S. Potash		Selenite (2 W c)
	110	10 Water
S. Strontia	120	
Bi-Carb. Potash		Carb. Barytes
Mercury		N. Potash
Lead	130	M. Barytes (d)
Silver		Red Oxid ☿
Litharge	140	
Ox. Silver		
Bin Oxal Potash	150	S. Barytes
Oxalate M. Potash		S. Magnesia (c 7 W)
(c 3 W) S. Copper	160	N. Barytes
Corrosive Sublimate	170	Carb. Lead
Phosph. Lead		N. Iron (c 7 W)
Mur. Silver	180	M. Lead
		S. Zinc (c 7 W)
S. Lead	190	Oxalate Lead
(c 10 W) S. Soda	200	N. Lead
	220	
	240	
2 Mercury Protoxid ☿	260	
	280	
	300	Calomel (2 ☿)

CLOUDS.

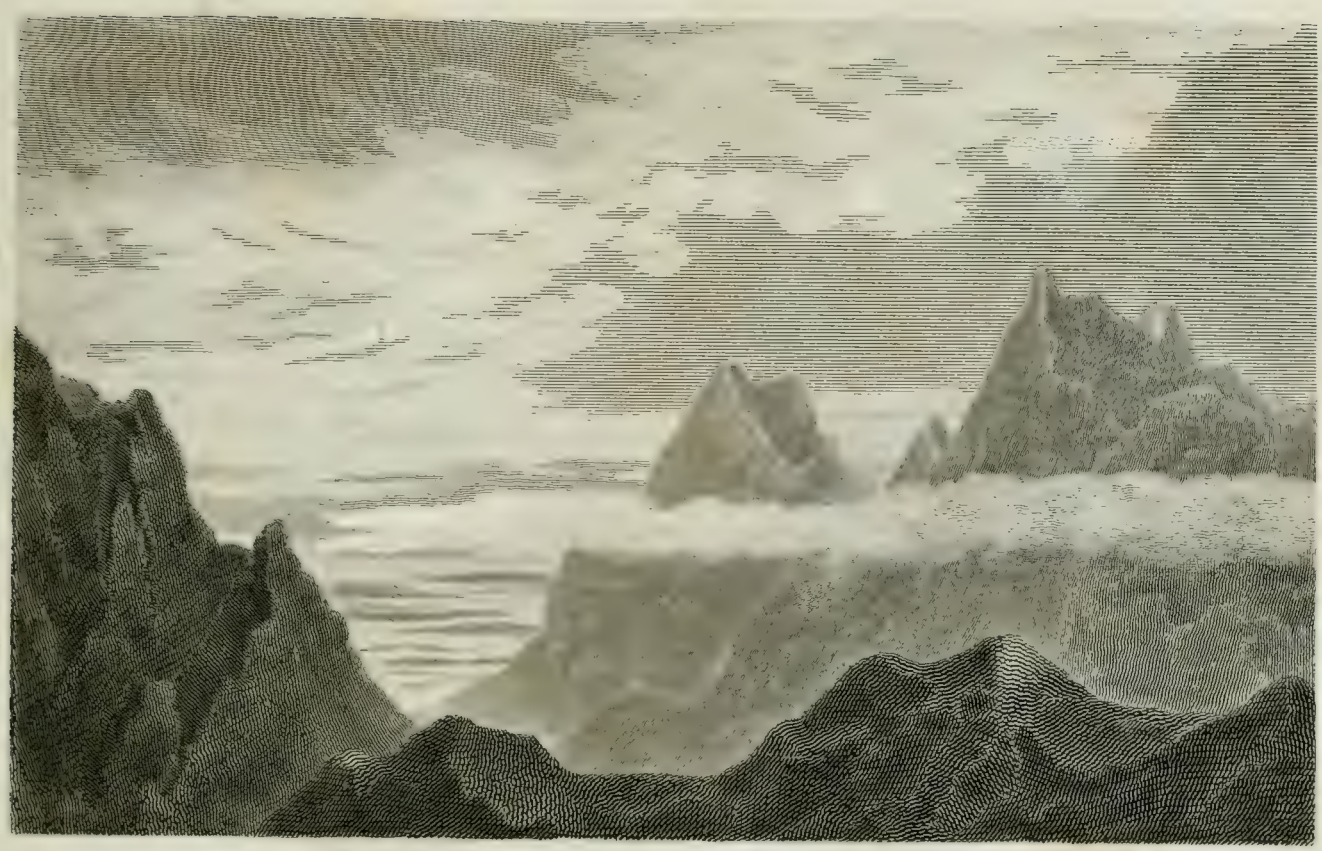
PLATE I.

F. Kennyon del.

1. Cirrus, *in different forms* _ 2. Cirro-stratus, *subsiding on* Cumuli *beneath* _ 3. Cirrus, *as seen before Thunder* _ 4. Cirro-cumulus, *as seen before Thunder*
5. A Nimbus, *flanked by* Cirro-stratus, *and giving an Electrical discharge* _ 6. *A range of* Cumuli, *passing to* Cumulo-strati, *before Thunder*

Published as the Act directs June [illegible]

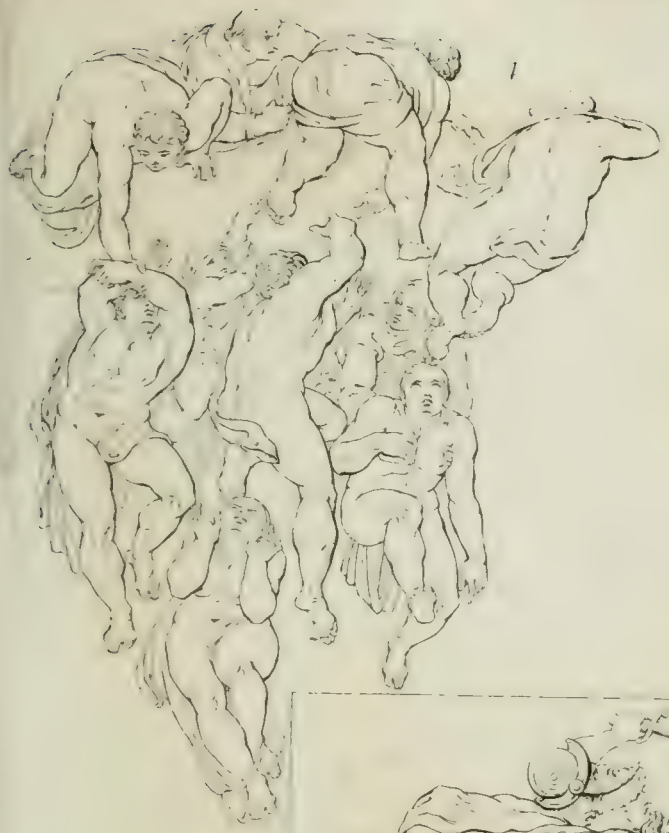
CLOUDS.



E. Kennion del. Milton sculp.

1. Cirro-stratus _ 2. 2. *distant* Cirri-strati _ 3. 3. Cirrus *passing to* Cirro-cumulus _ 4 Cirro-stratus, Cumulus *and* Cumulo-stratus *grouped*

Published as the Act directs, Jan 1st 1810 by Longman Hurst Rees & Orme Paternoster Row.



Moses Sculpt.

Published as the Act directs, by Longman, Hurst, Rees, Orme & Brown, London, June 1, 1820.

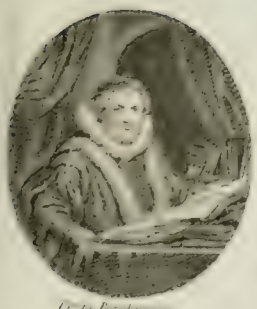
COMPOSITION.

2

6

2

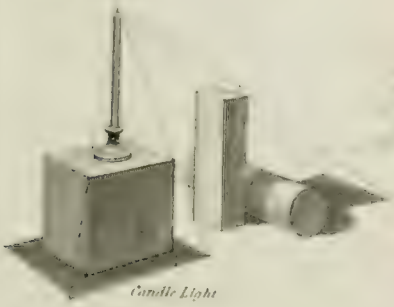
3

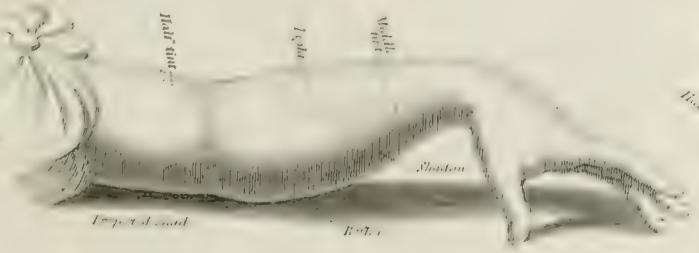


Leonardo Da Vinci

Leonardo Da Vinci

CLAIR OBSCURE. 7.





Published as the Act directs July 1, 1830 by Longman, Hurst Rees, Orme & Brown, Paternoster Row

CONICS.

AMBIGENAL.

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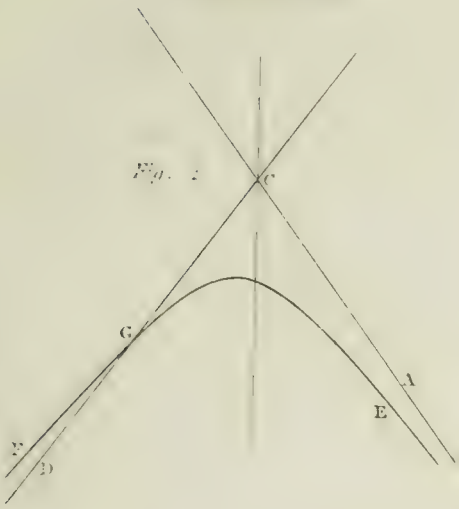

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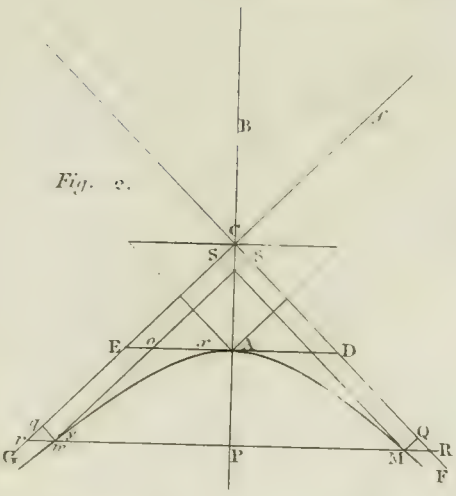

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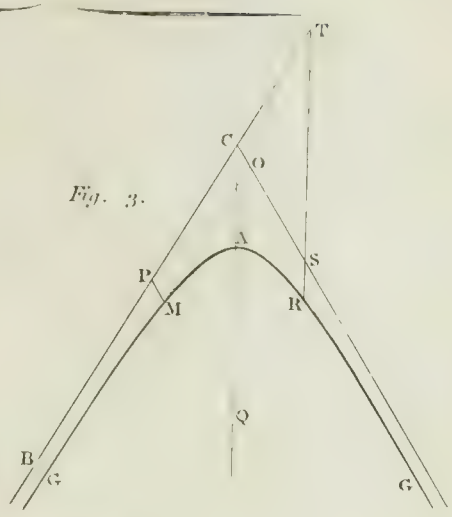

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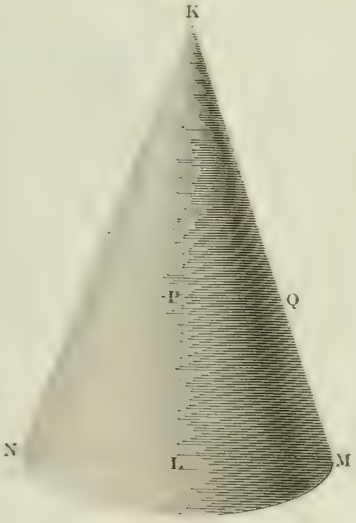

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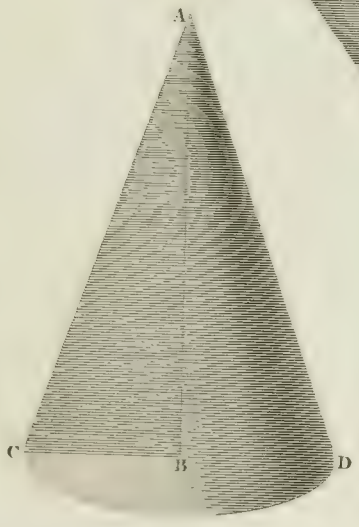

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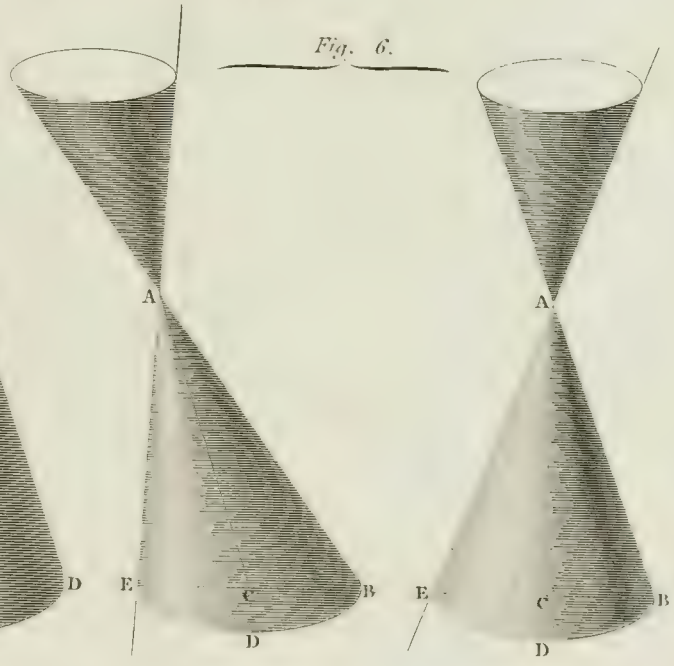

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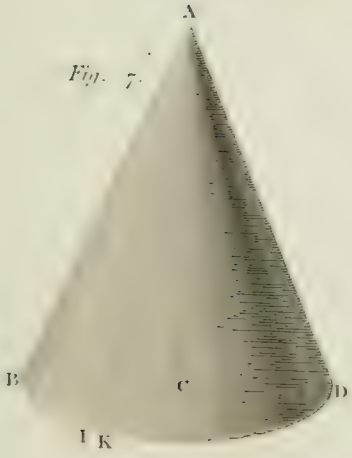

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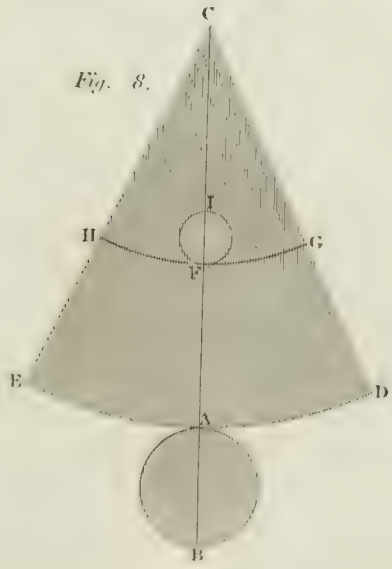

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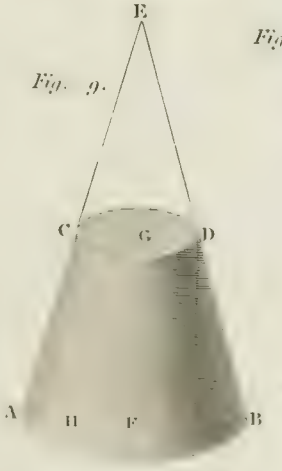

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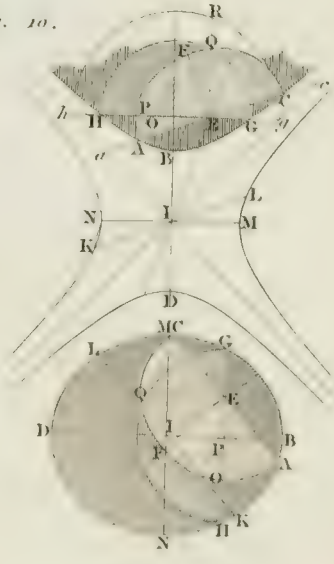

Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

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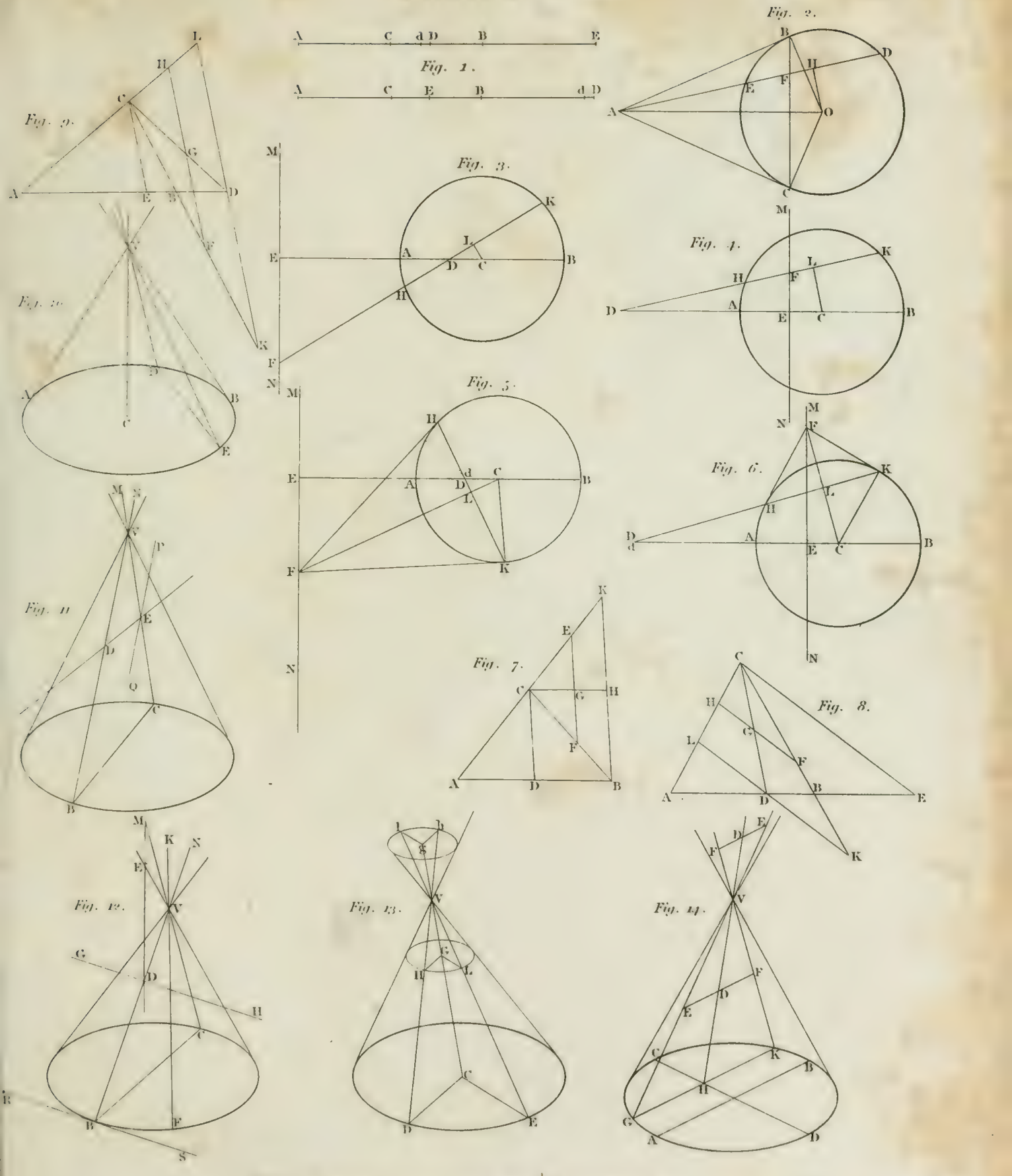

Published as the Act directs, Dec.r 1807, by Longman, Hurst, Rees & Orme, Paternoster Row.

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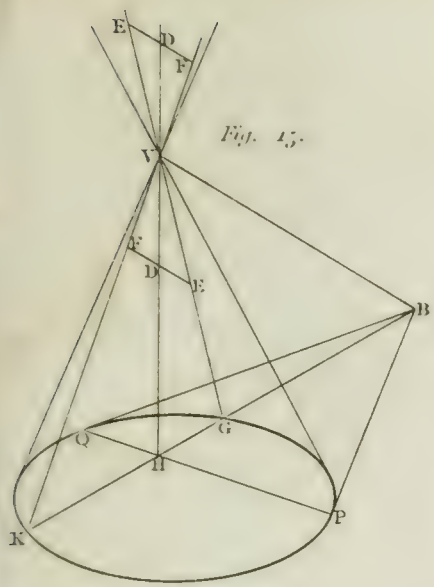

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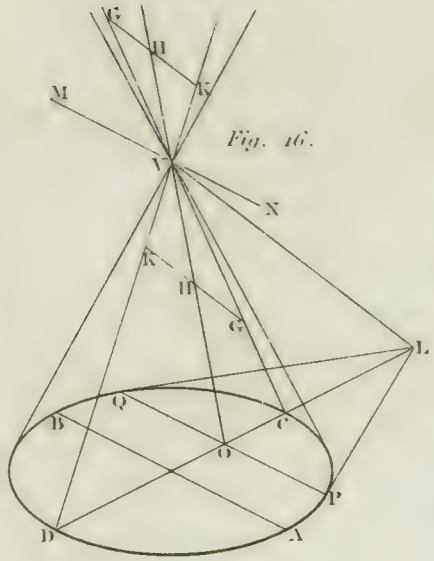

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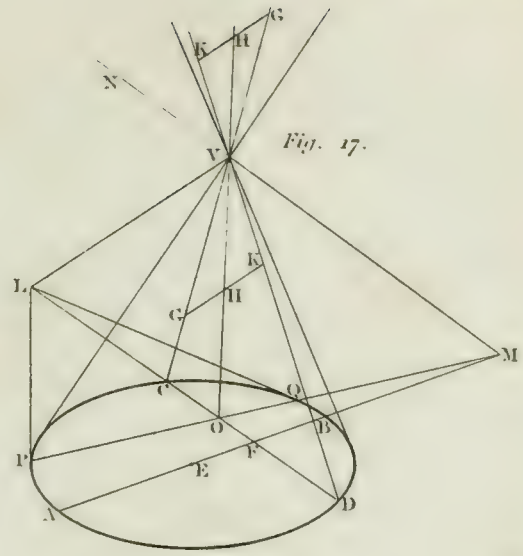

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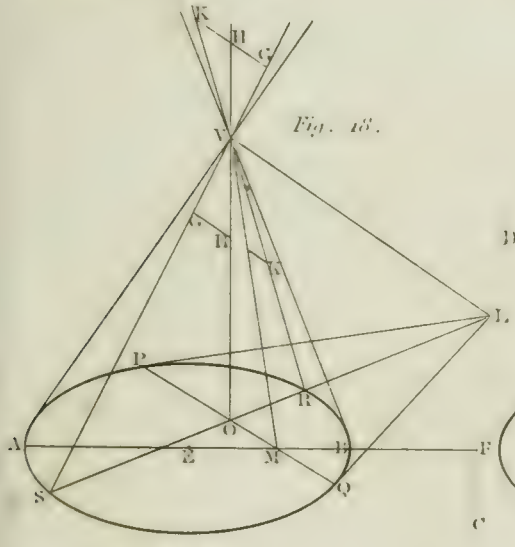

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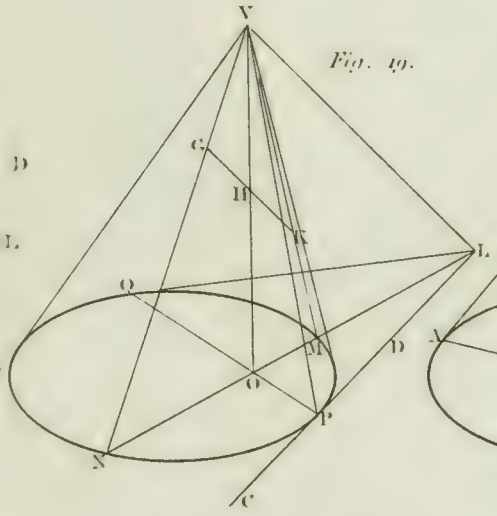

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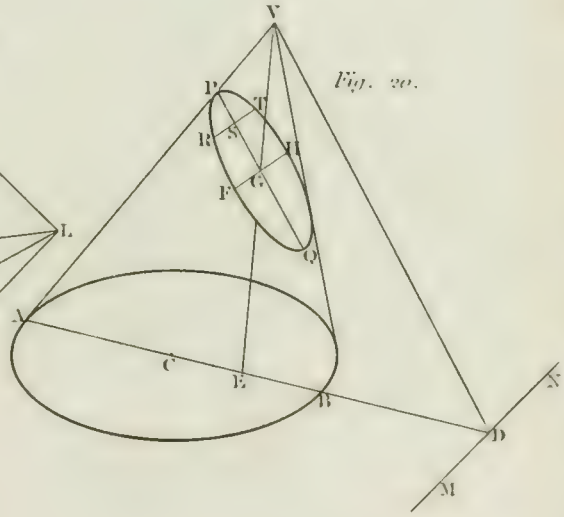

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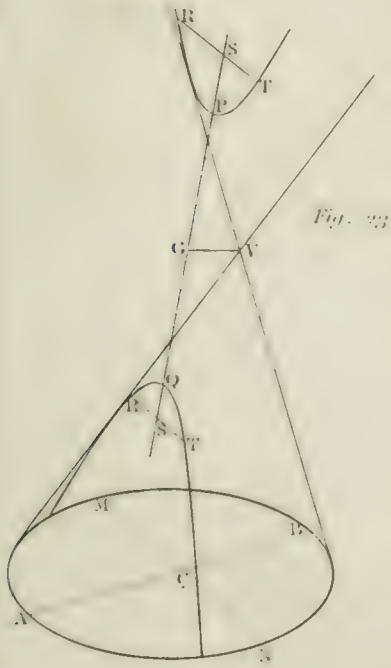

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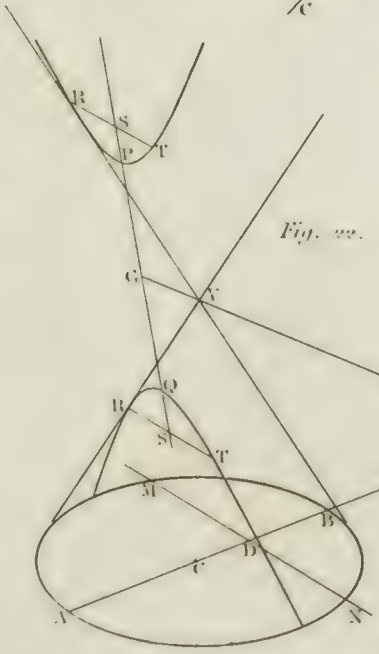

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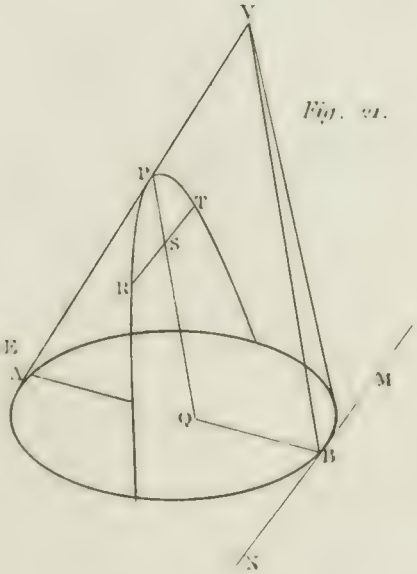

Fig. 21.

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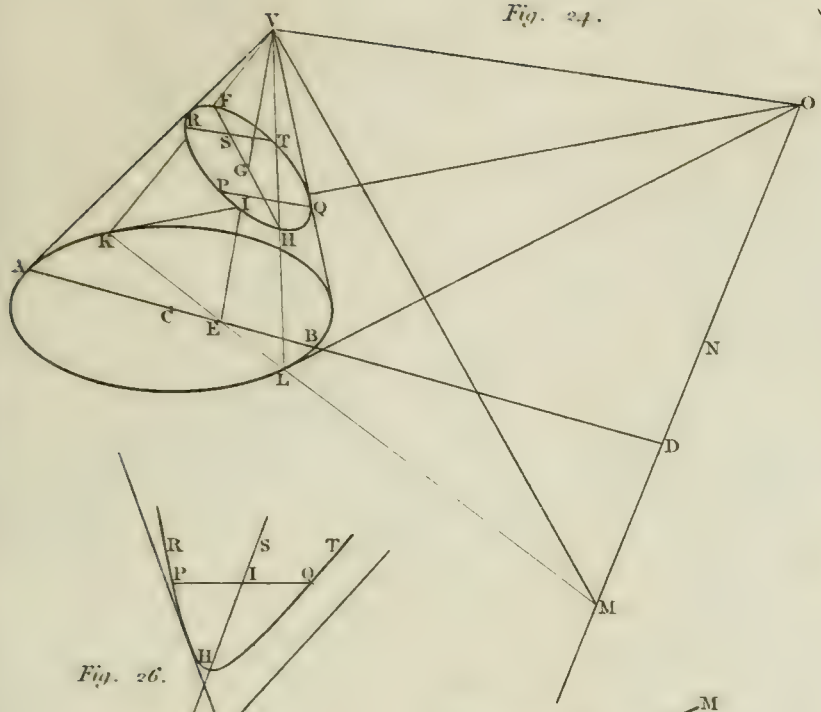
Fig. 24.



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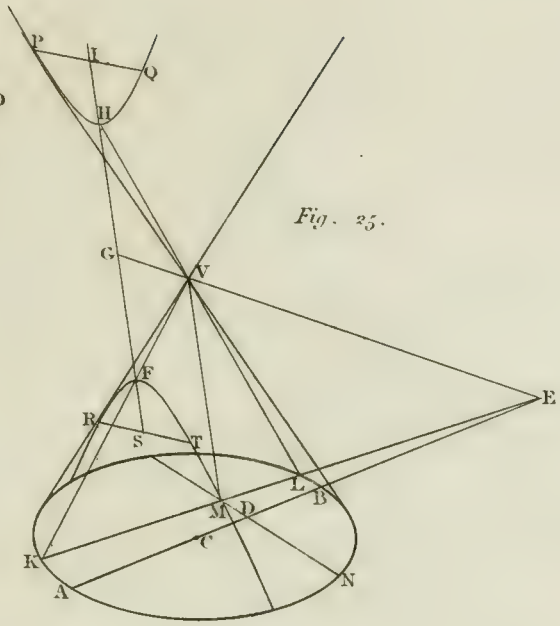

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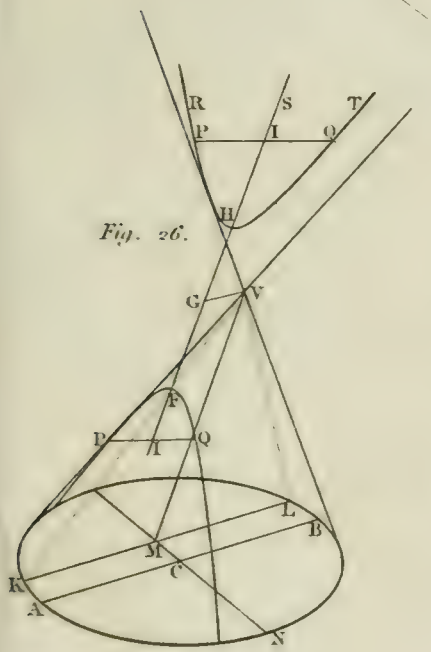

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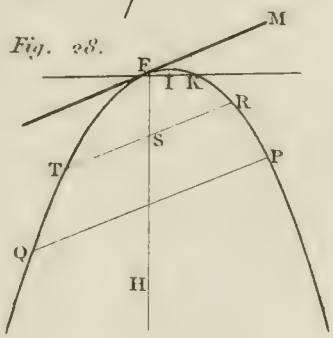

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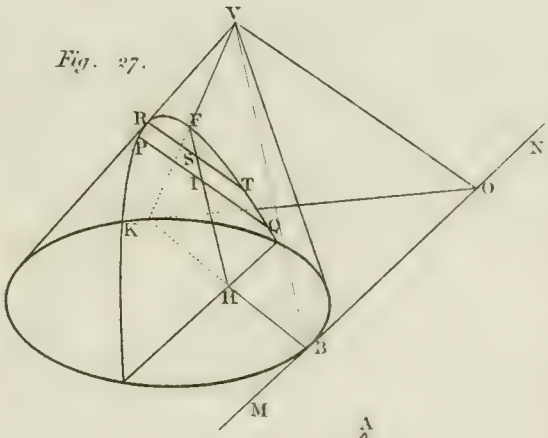

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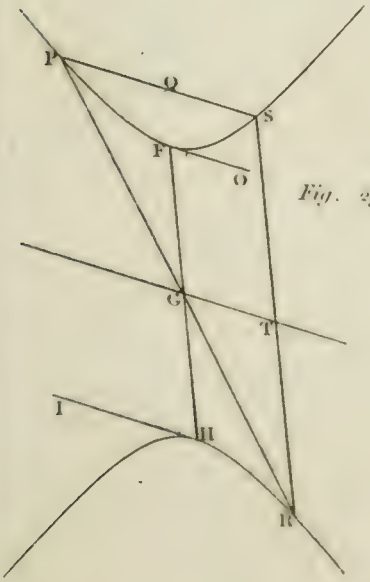

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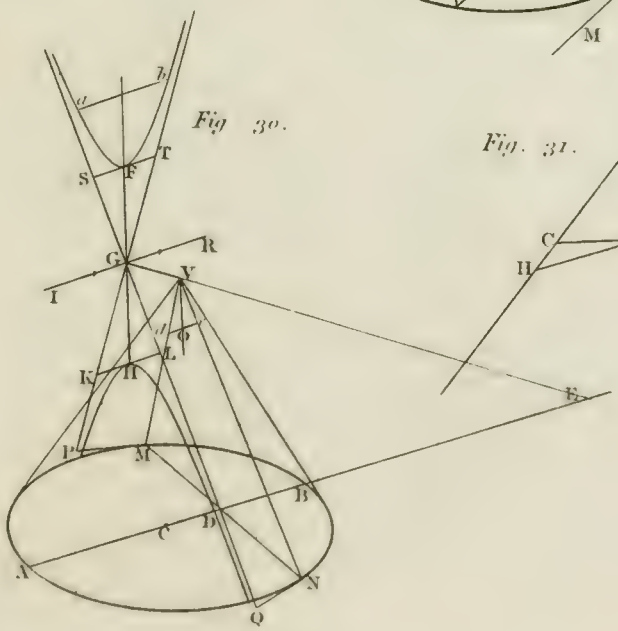

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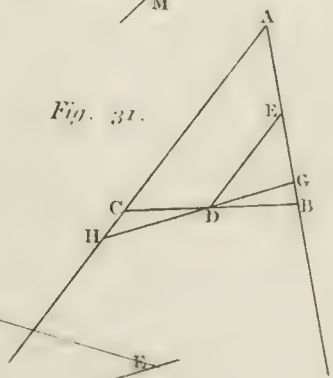

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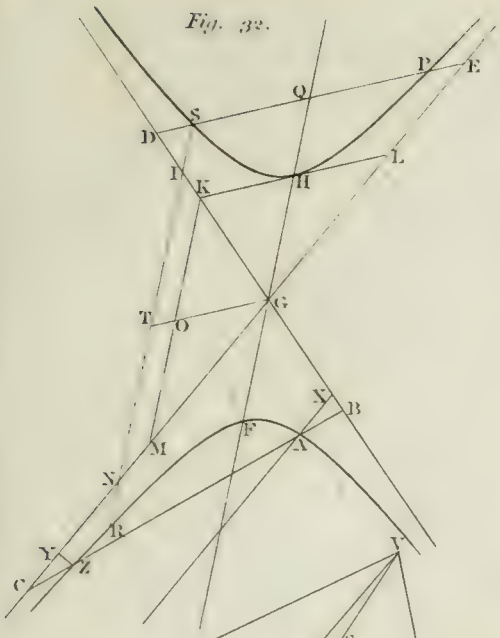

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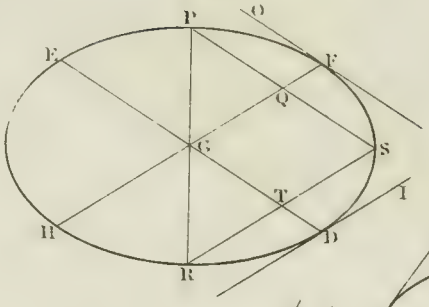

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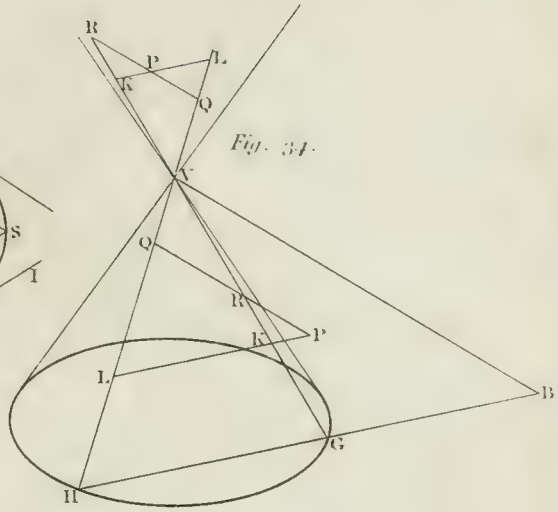

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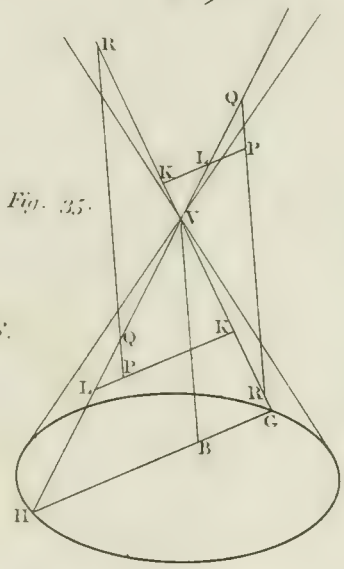

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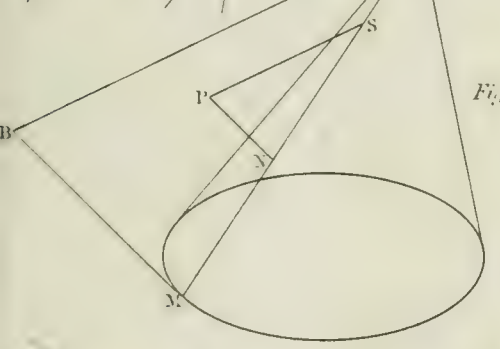

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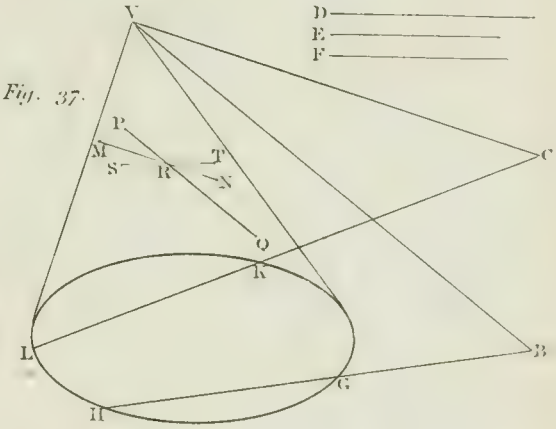

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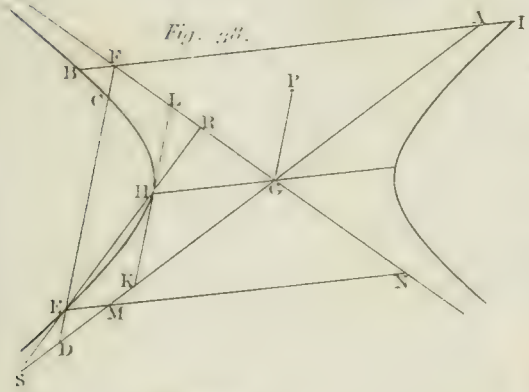

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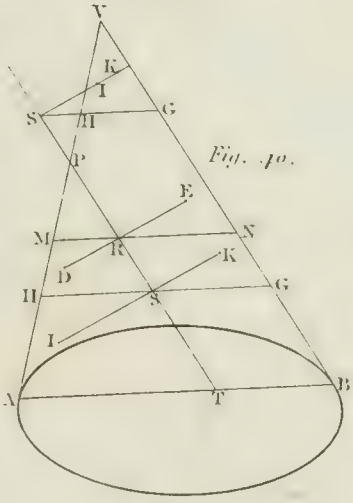

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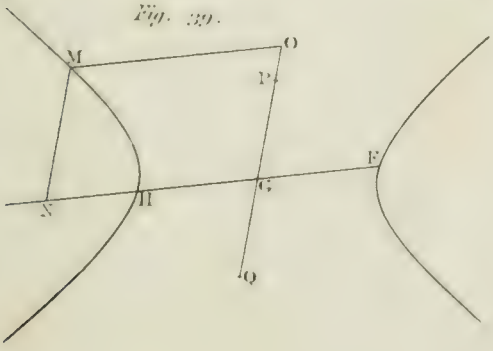

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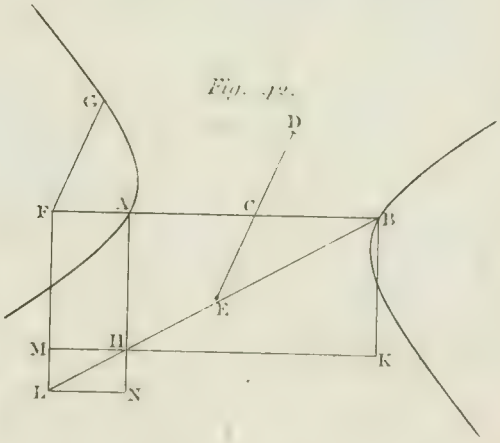

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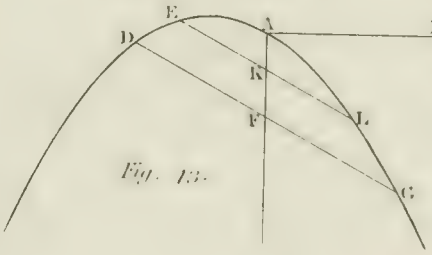

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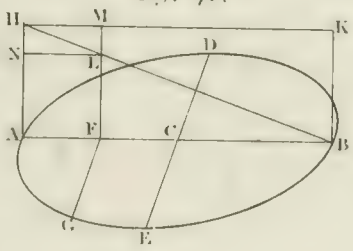

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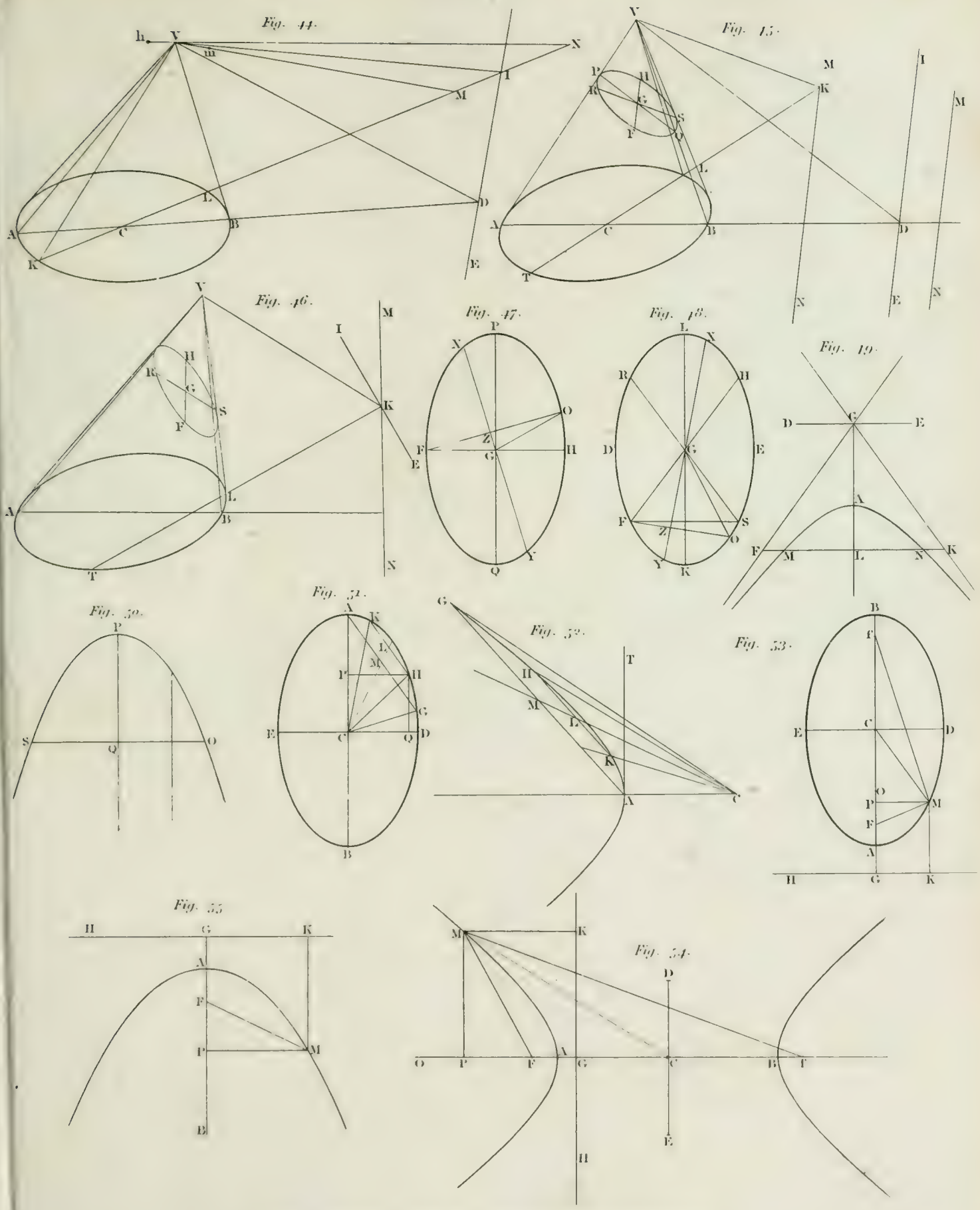

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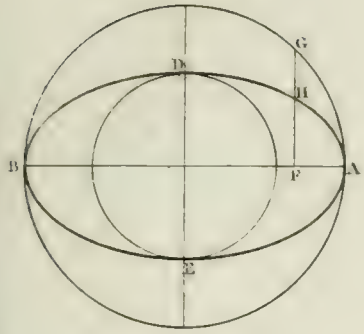
Fig. 1.



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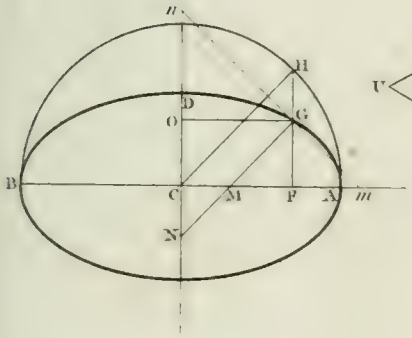
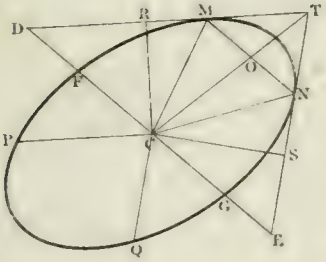


Fig. 3.



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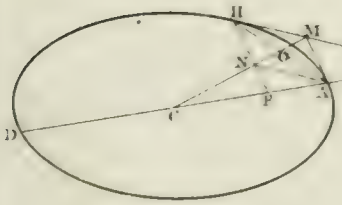

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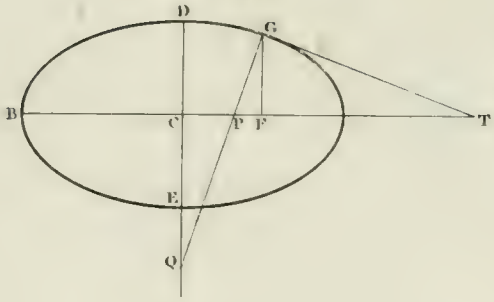

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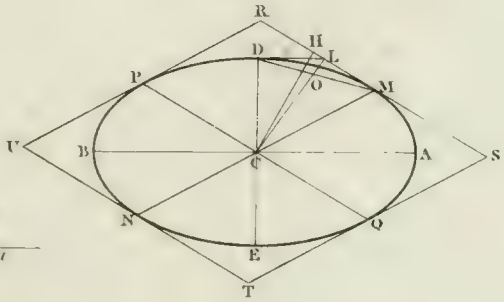

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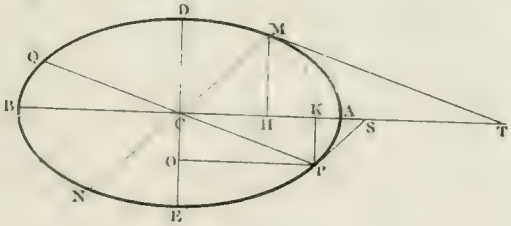

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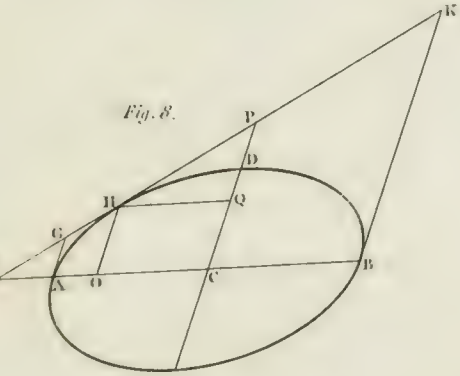

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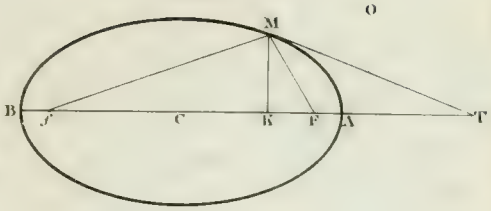

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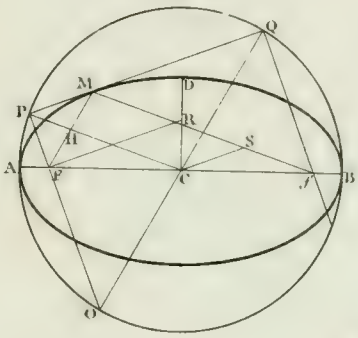

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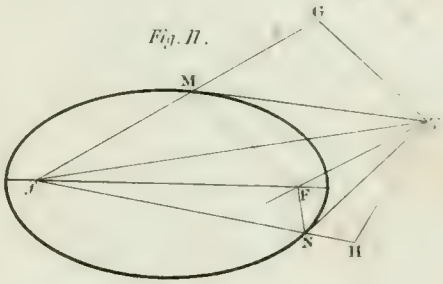

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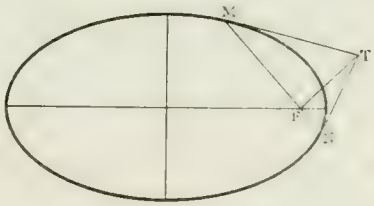

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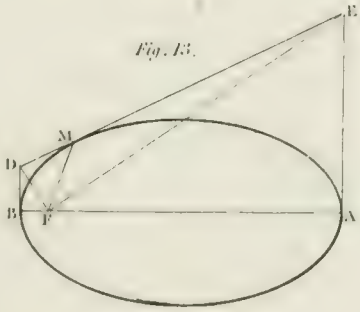

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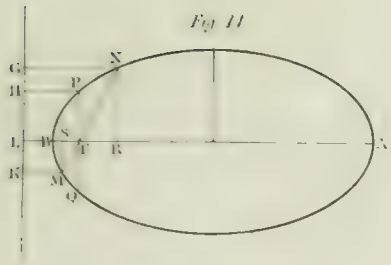
Fig. 11



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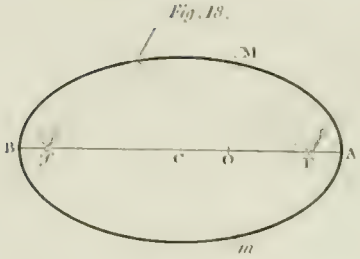

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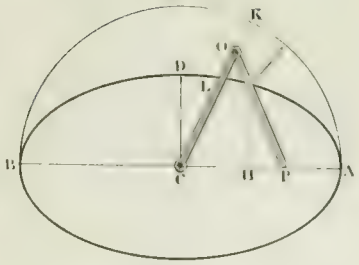

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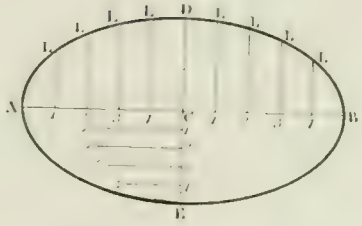

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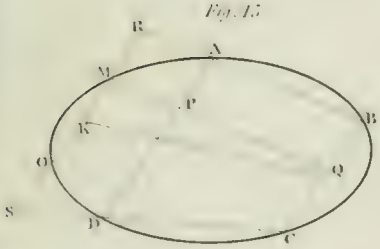

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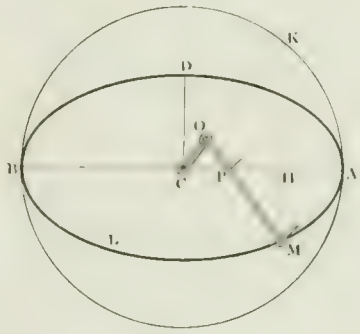
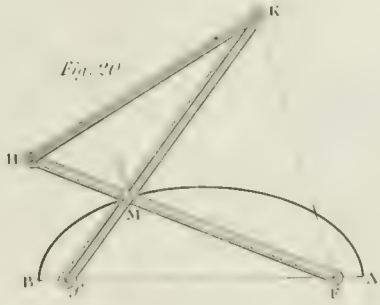


Fig. 20



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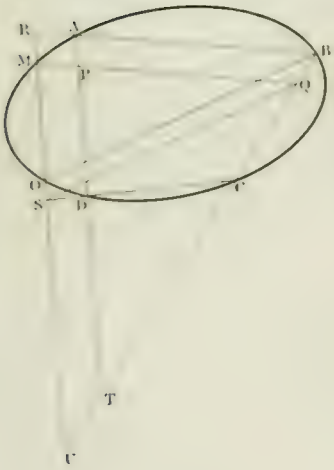

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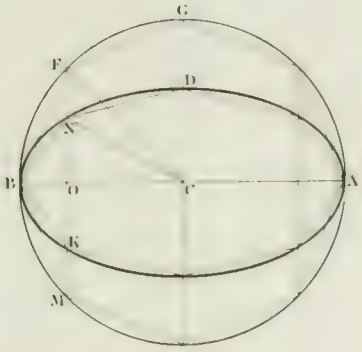

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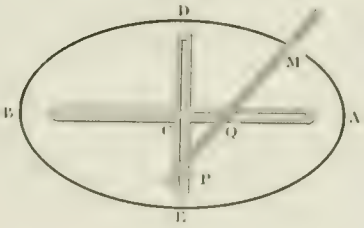

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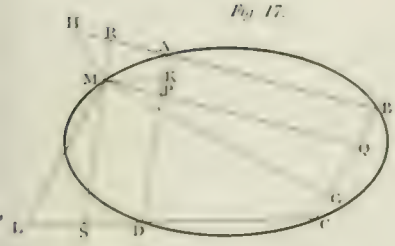

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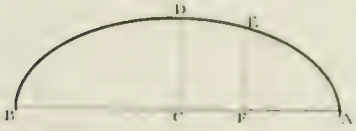

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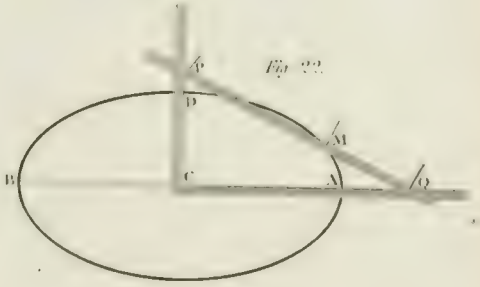

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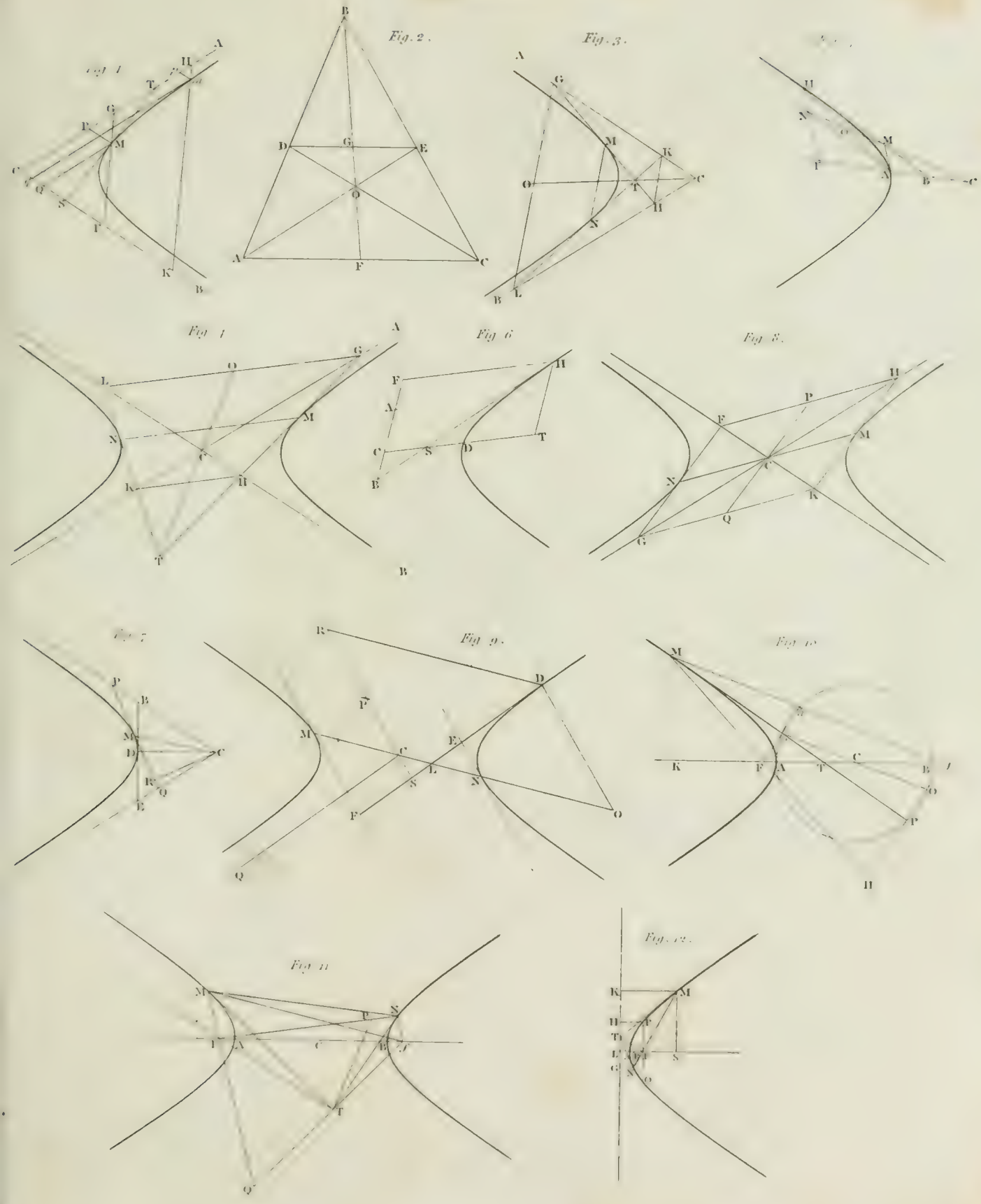
HYPERBOLA.



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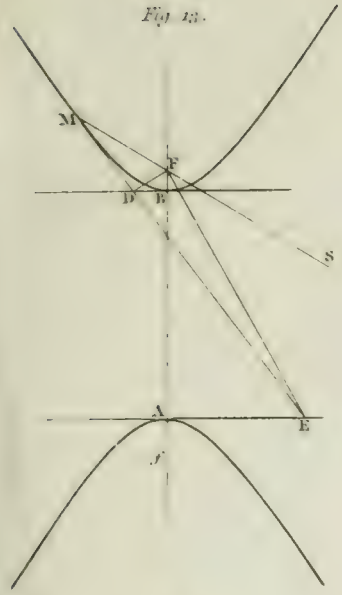
HYPERBOLA.

Fig. 13.



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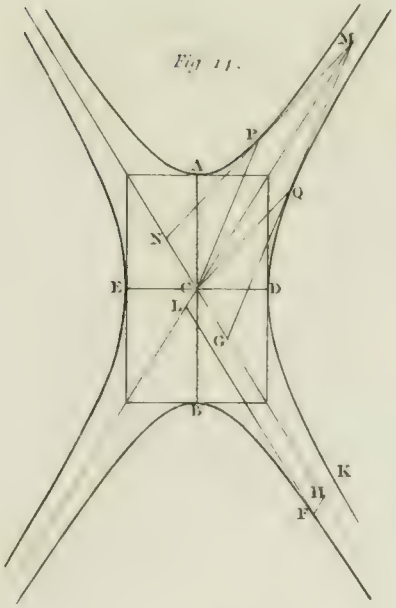

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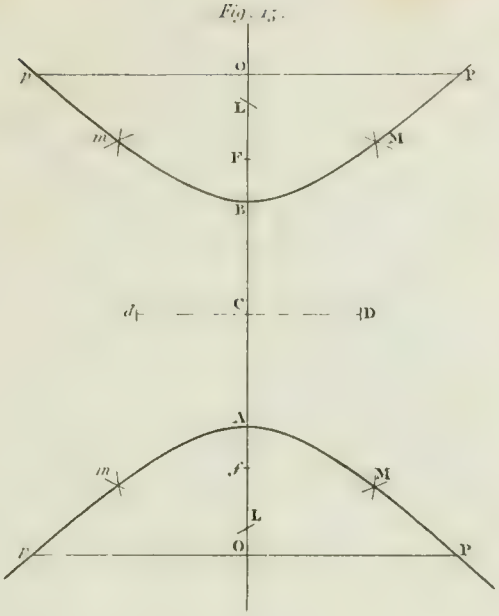

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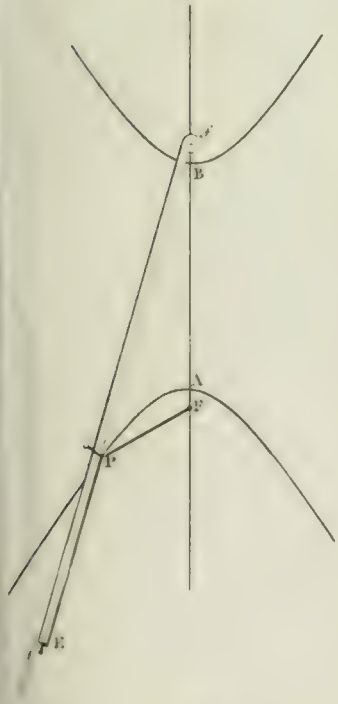

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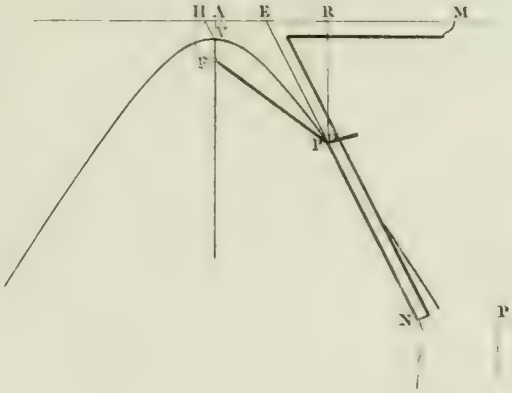

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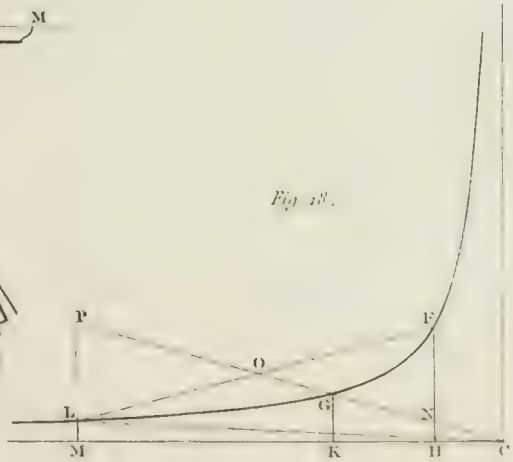


Fig. 19

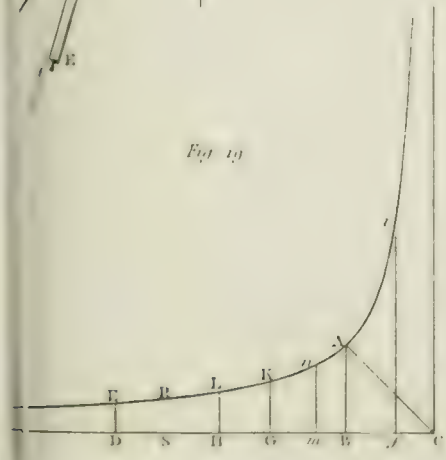


Fig. 20

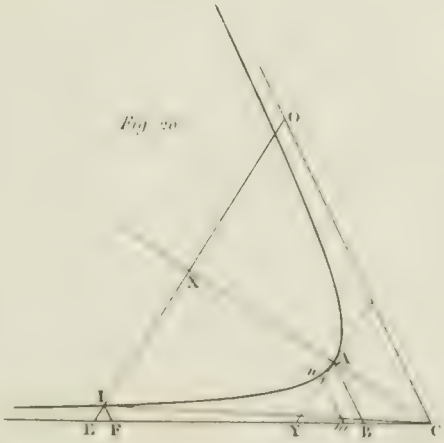
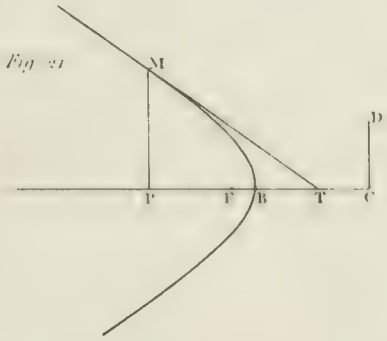


Fig. 21



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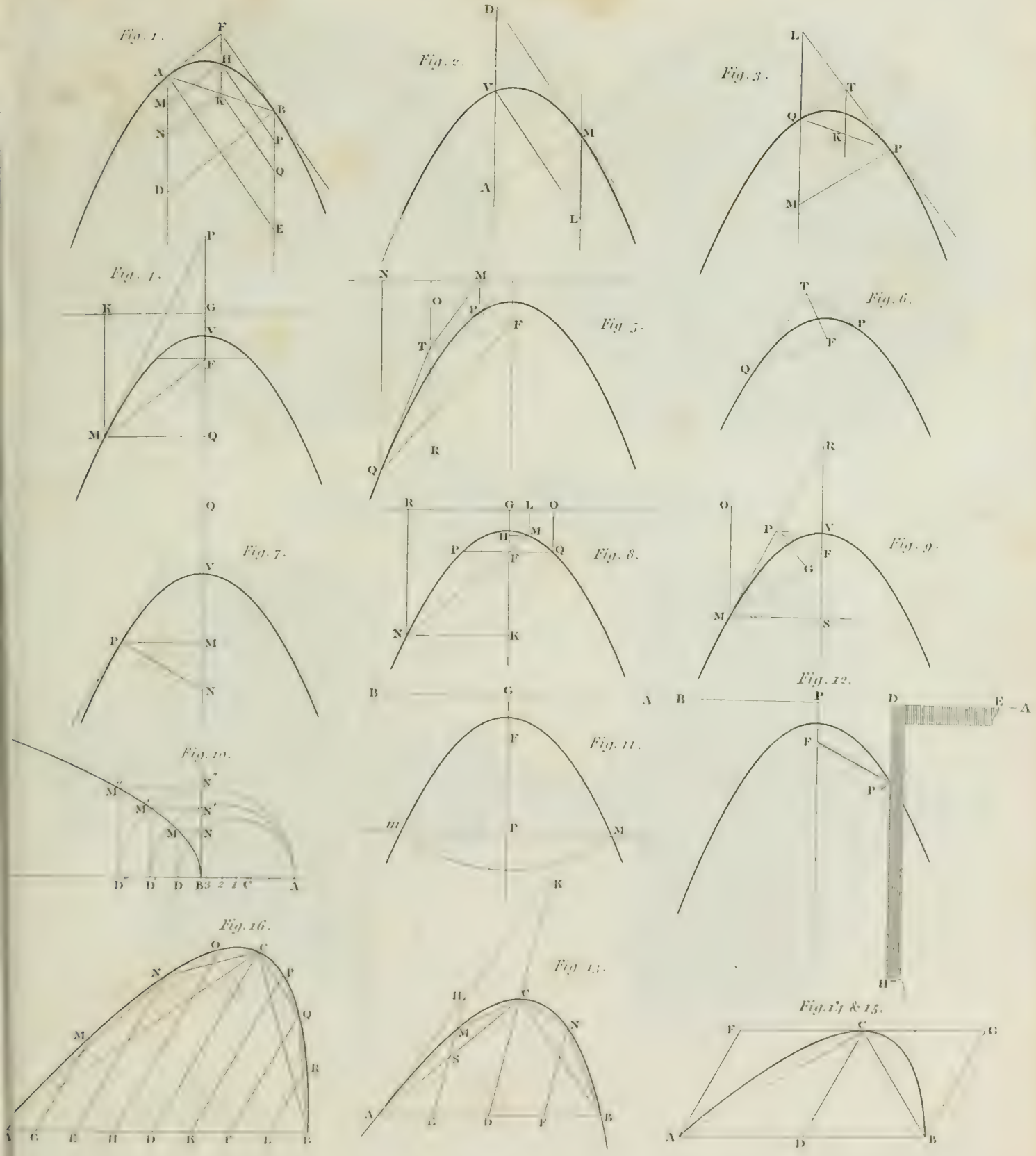
PARABOLA.



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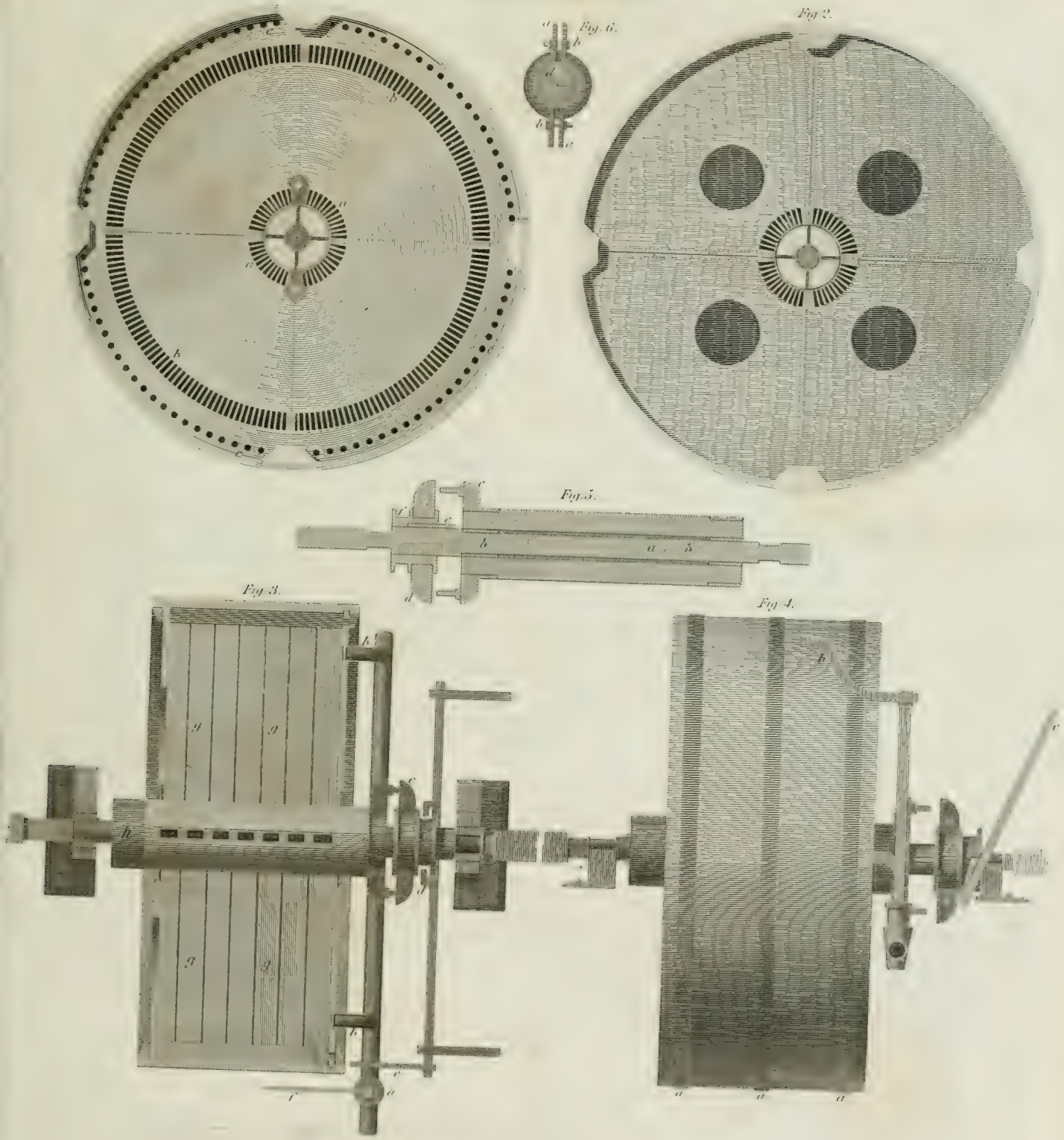
Lowry Sculp.

COTTON MANUFACTURE.

PLATE I.

CALICO PRINTING.



...r Wm Thomson.

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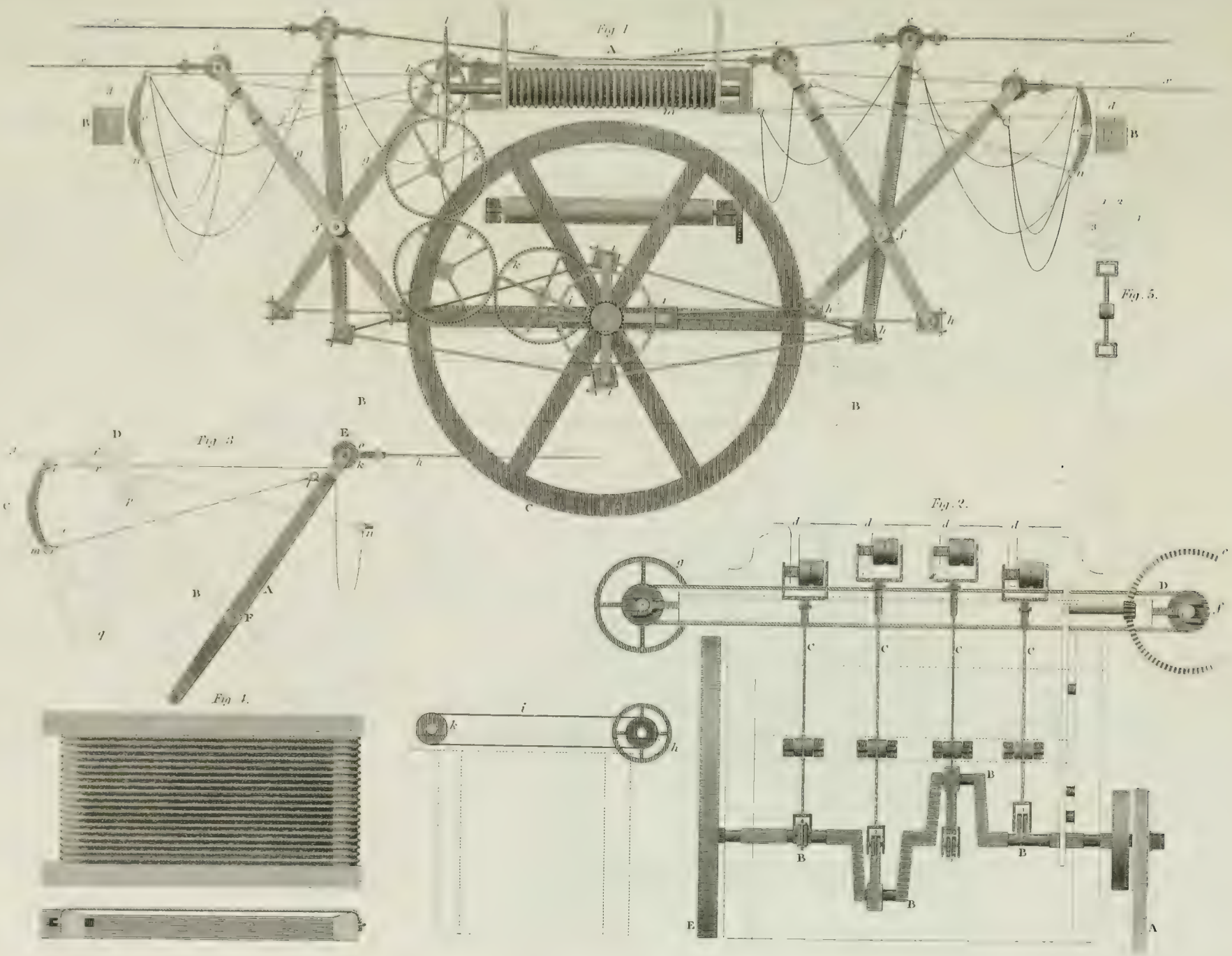
BATTING MACHINE.



Drawn by J.s Burton.

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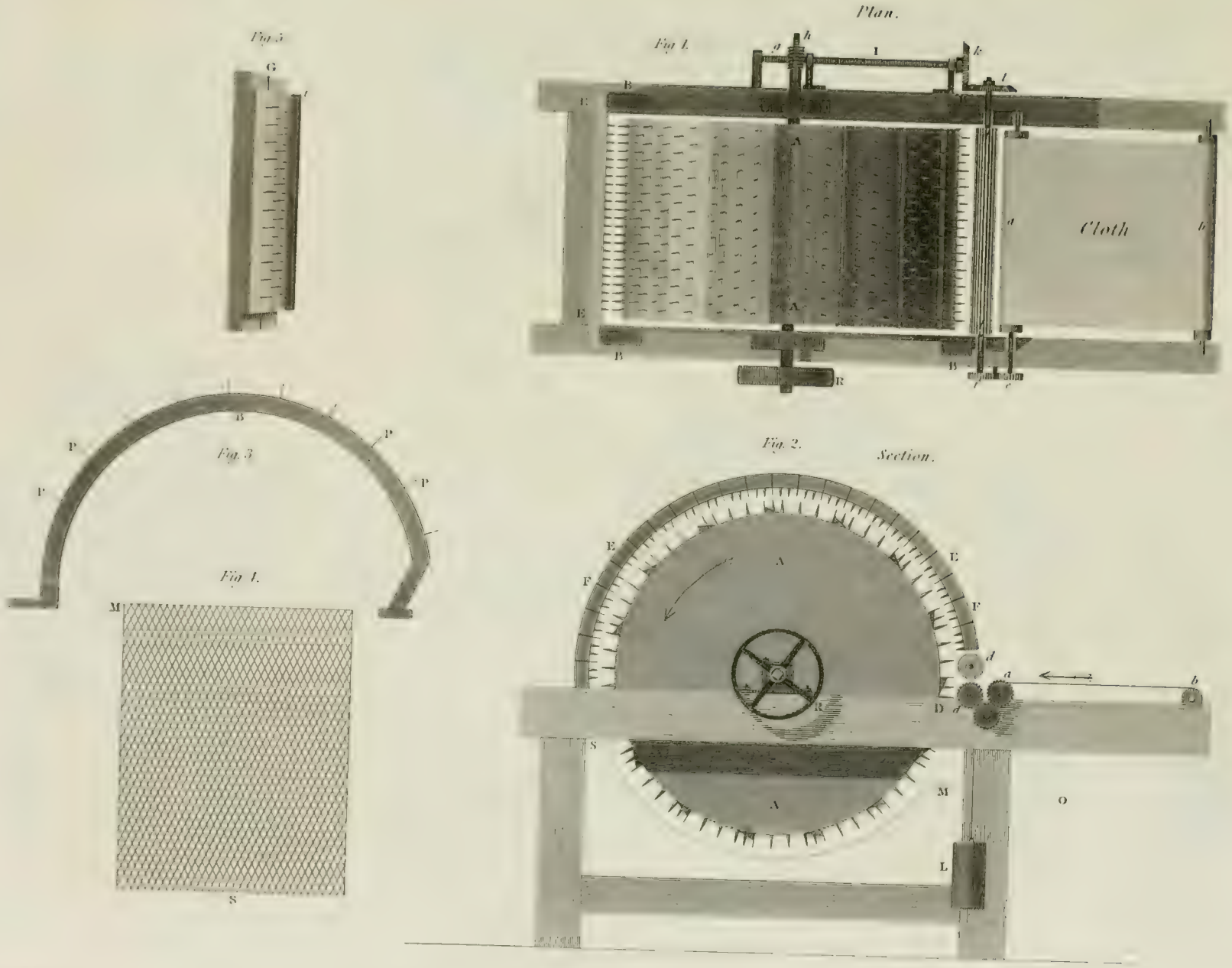
COTTON MANUFACTURE.

DEVILING.



Drawn by James Burton.

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CARDING.

Fig. 1

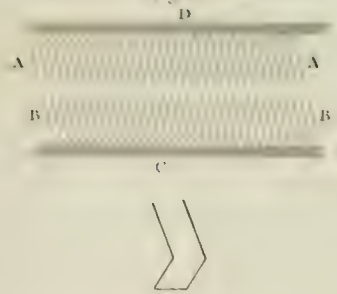


Fig. 1 Plan

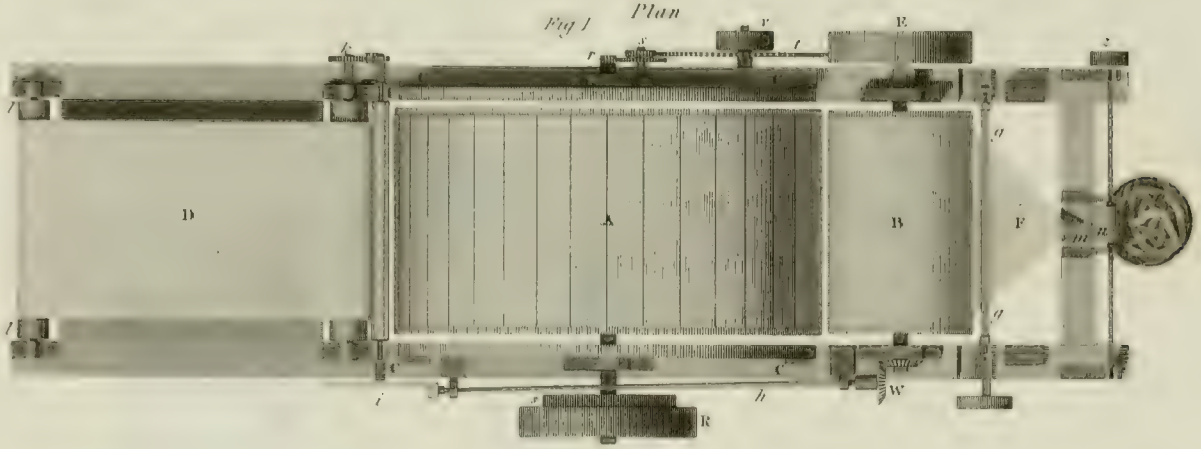


Fig. 3.

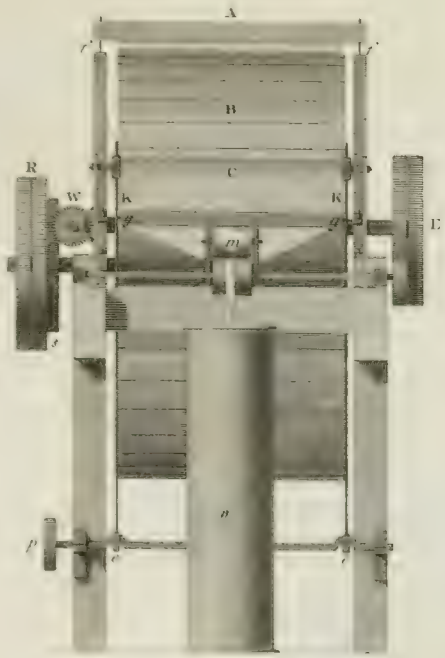
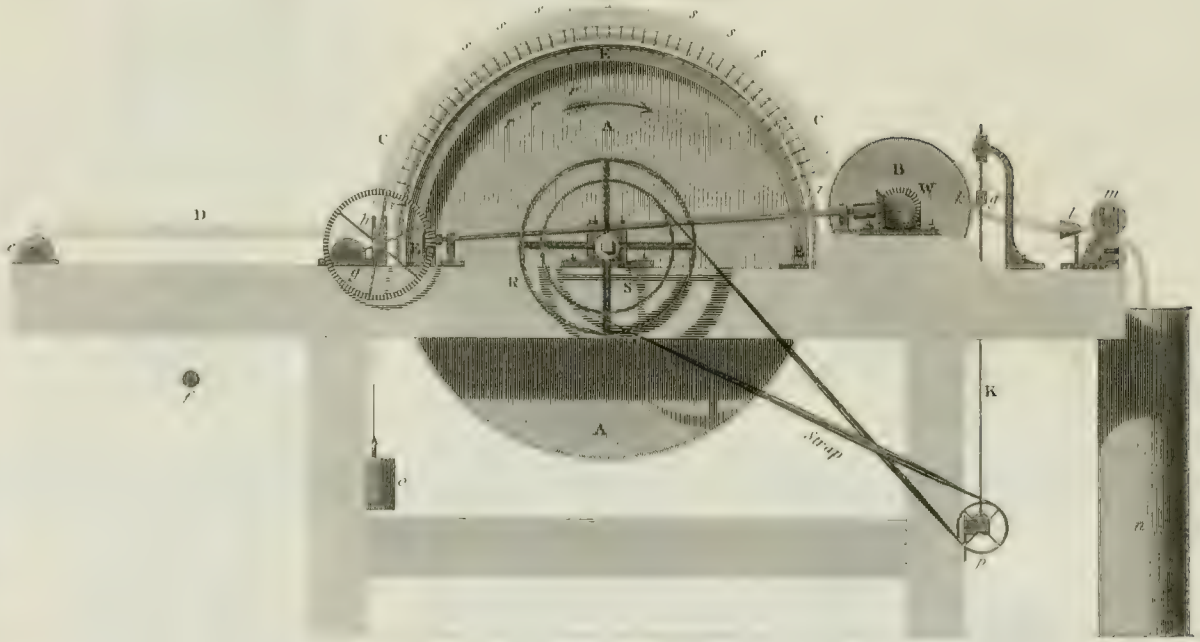


Fig. 2. Section



Drawn by James Brown

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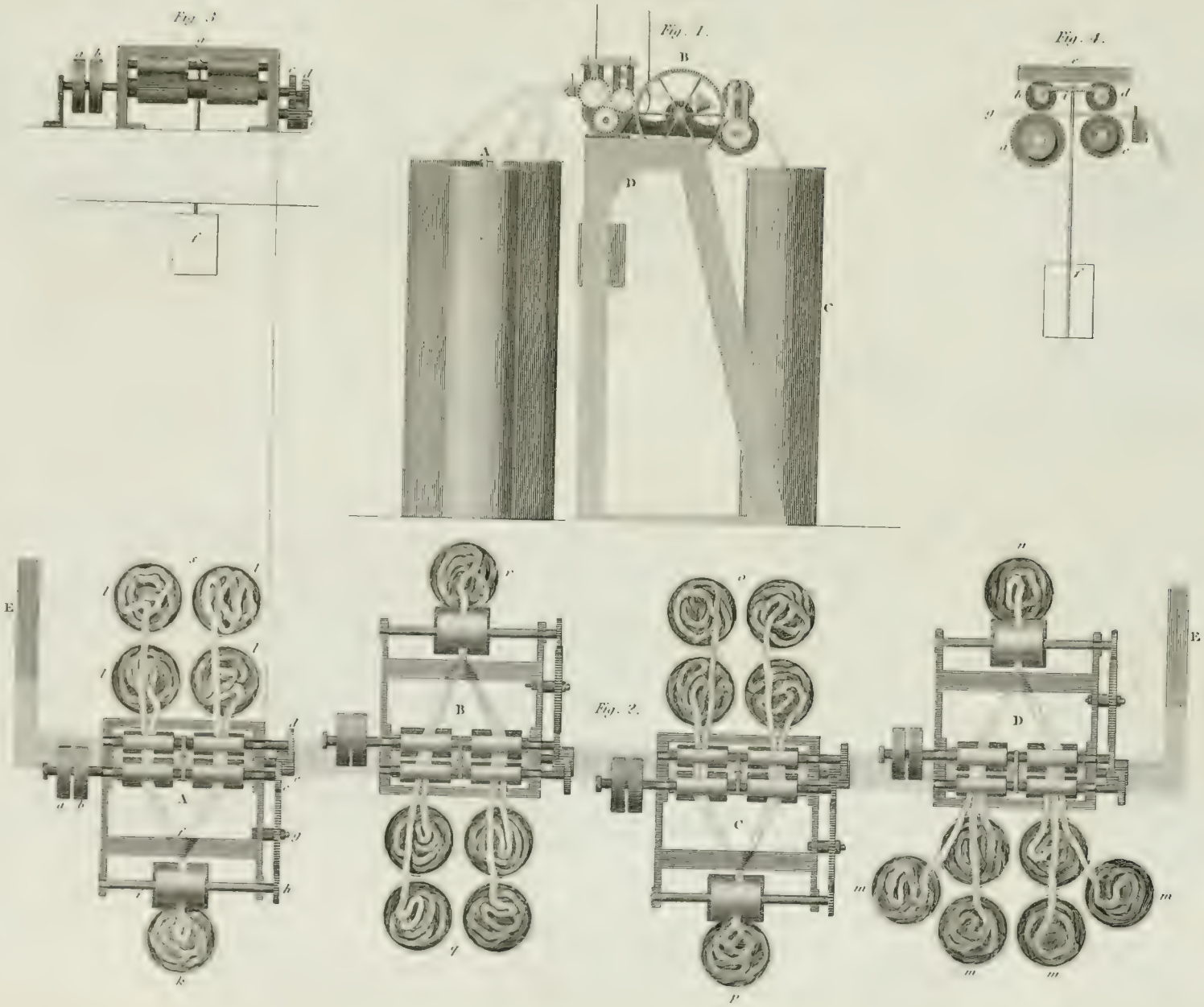
COTTON MANUFACTURE.

PLATE V.

DRAWING FRAME.



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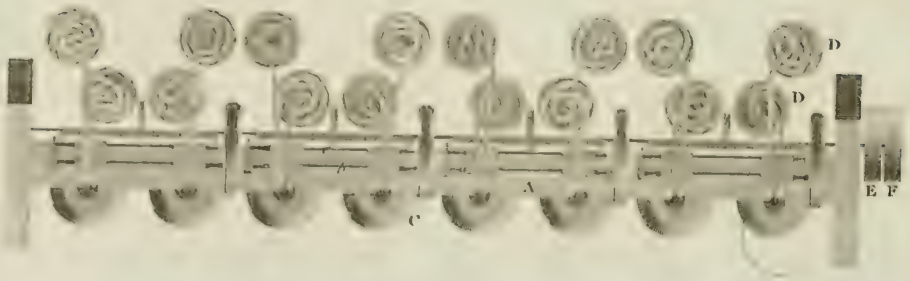
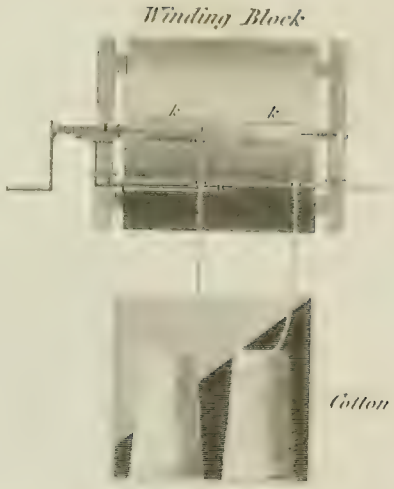
COTTON MANUFACTURE.

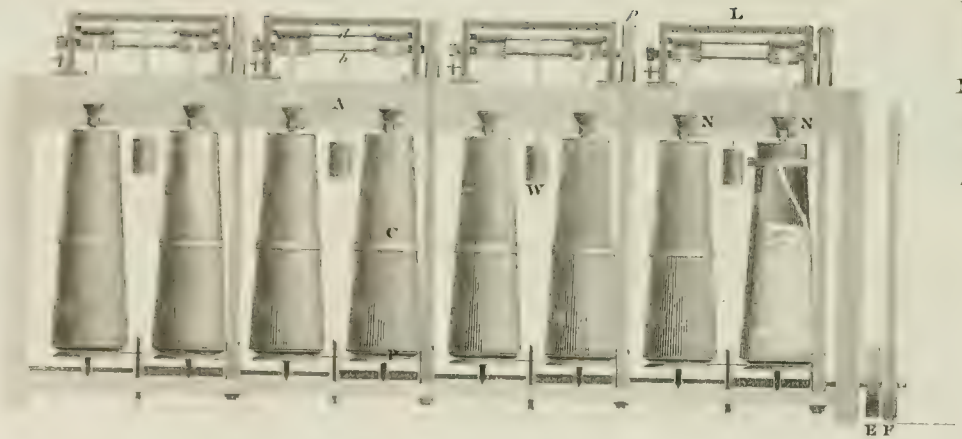
PLATE

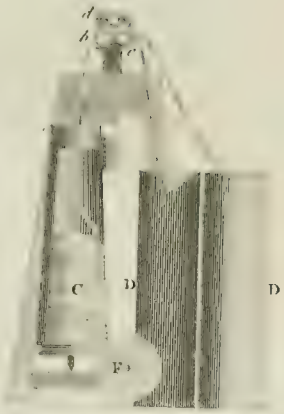
ROVING CAN FRAME.





A *Roller beam.*
b *Front Roller.*
c *Back Roller.*
d *Top front Roller.*
C *Revolving Can.*
W *Roller weights.*
P *Can Pulley.*
DD *Back Cans.*
E *Driving Pulley.*
F *Loose Pulley.*
NN *Can Funnels.*
L *Clearer.*
p *Front roller Pulley.*
k k *Bobbins.*





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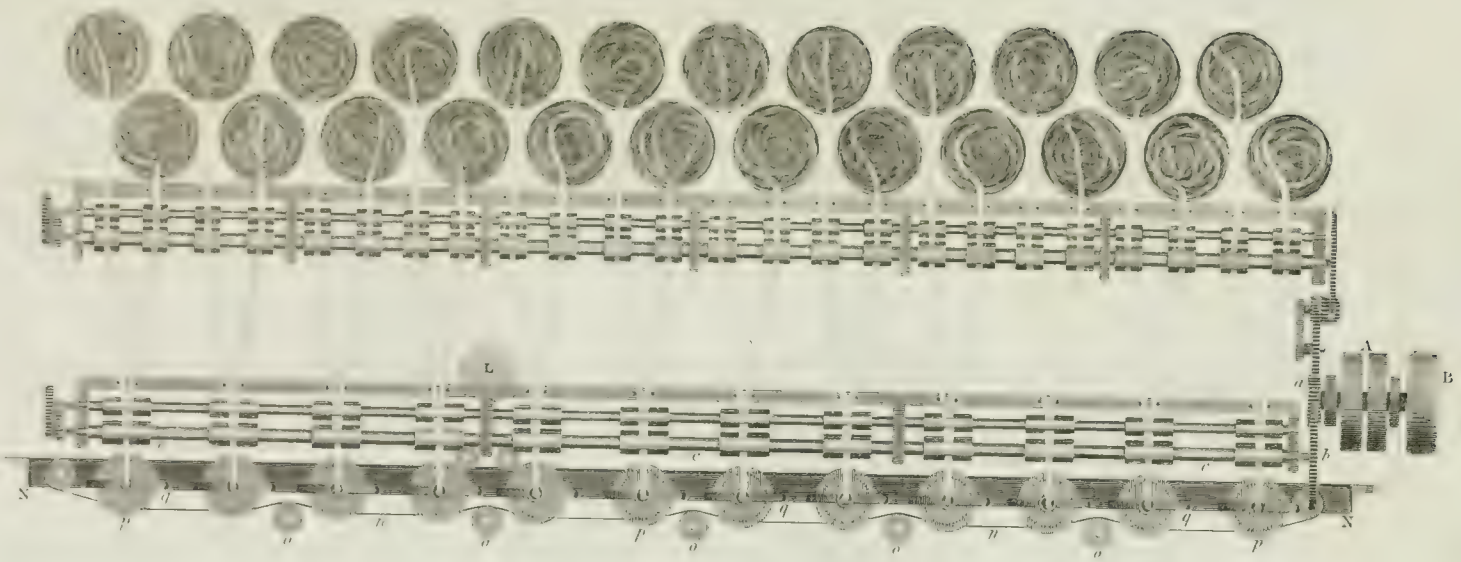
ROVING FRAME, Plate 1st

These cans contain the slivers brought from the Drawing frame.



Horizontal Plan of the Machine called Double Speeder.

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COTTON MANUFACTURE.

ROVING FRAME termed *DOUBLE SPEEDER.*

PLATE VII.

Fig. 1. Elevation in Front.

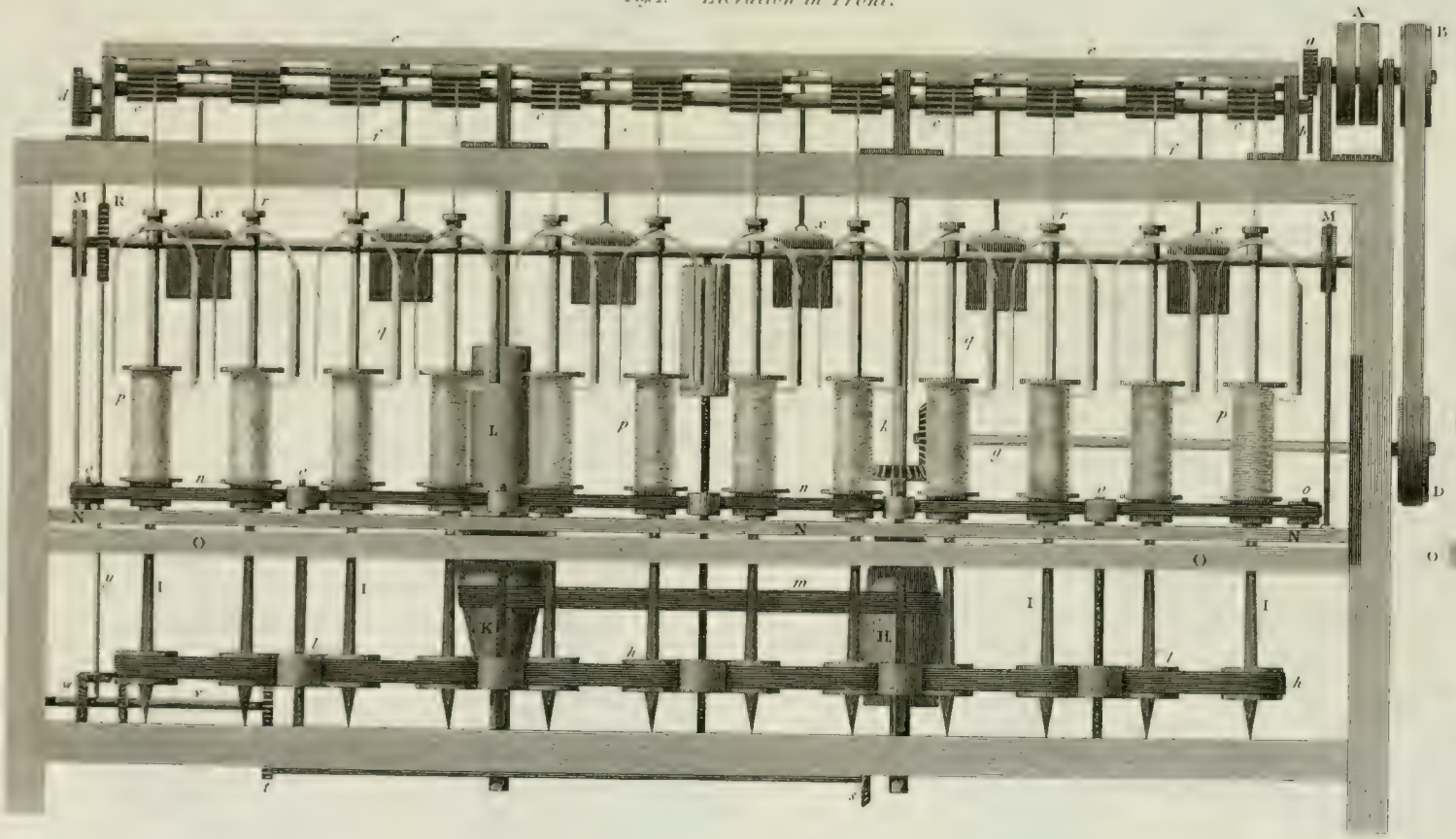
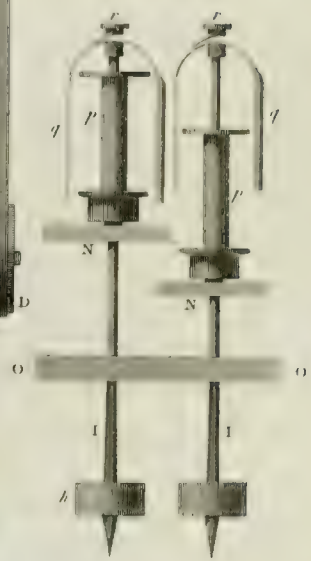


Fig. 2 & 3.



J. Barton del.

Published as the Act directs, 1811, by Longman Hurst Rees Orme & Brown Paternoster Row.

Engraved by Wilson Lowry.

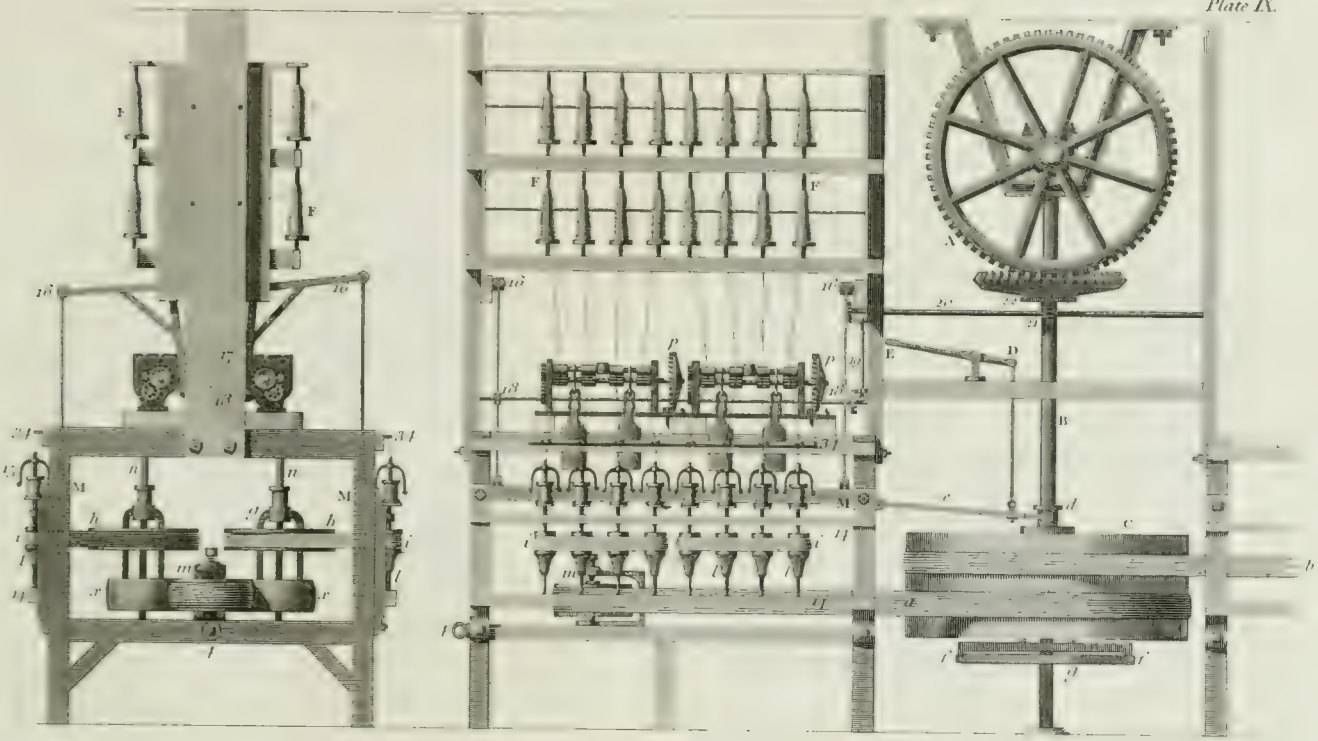
COTTON MANUFACTURE.

WATER SPINNING FRAME.

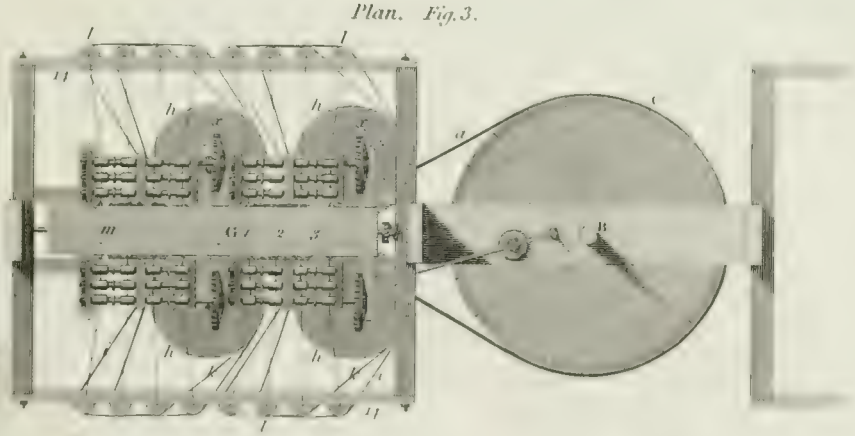
End View. Fig. 2.

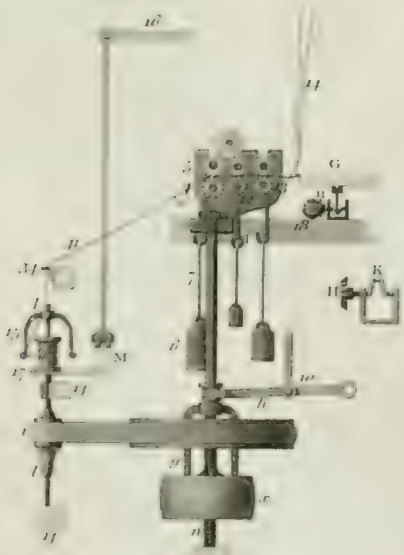
Elevation. Fig. 1.

Plate IX.



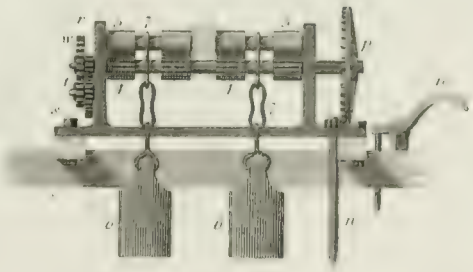
Plan. Fig. 3.





Spindle enlarged. Fig. 4.

End View. Fig. 6.



Elevation of Rollers. Fig. 5.

J. Farey junr del.

Published as the Act directs, 1813, by Longman Hurst, Rees, Orme and Brown, Paternoster Row London.

THROSTLE SPINNING FRAME.

Fig. 1.

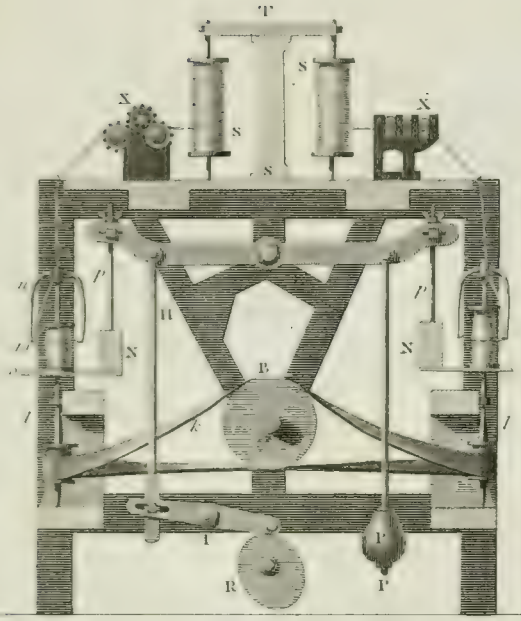


Fig. 2.

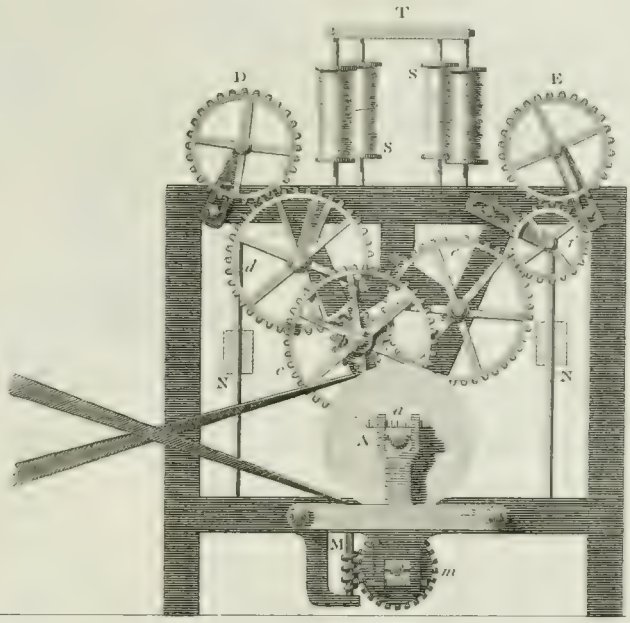
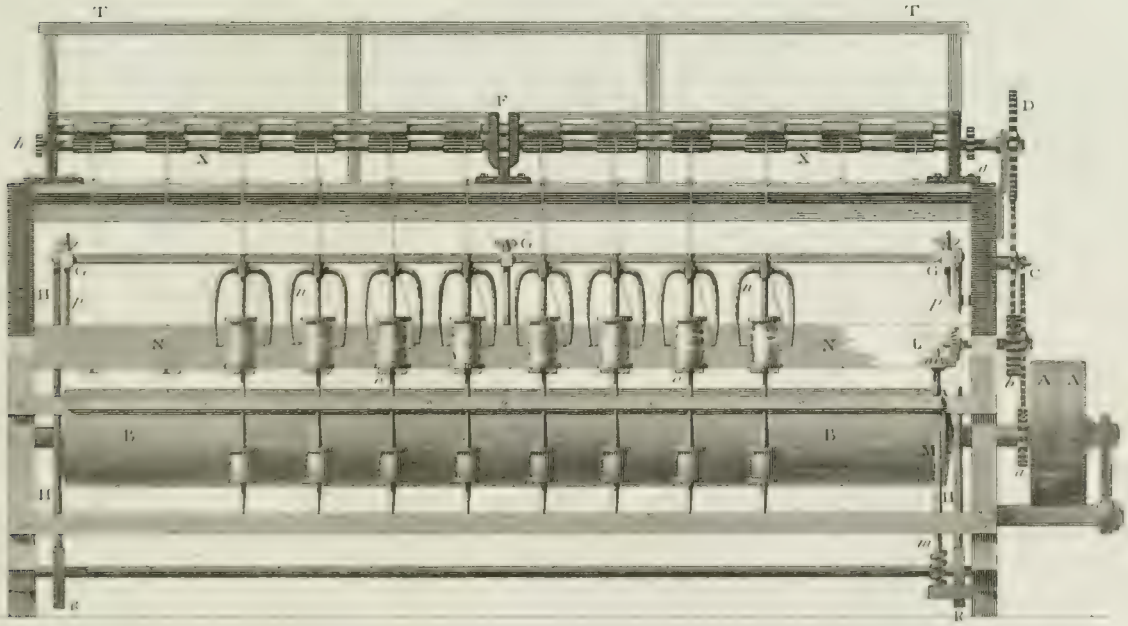


Fig. 3.

Elevation in Front.



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MULE SPINNING.

Fig. 1.

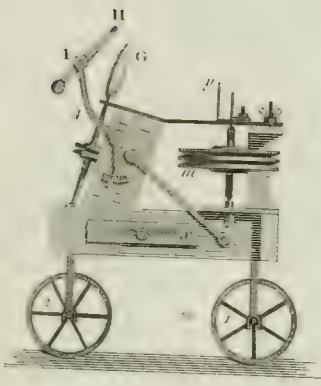

Fig. 2.

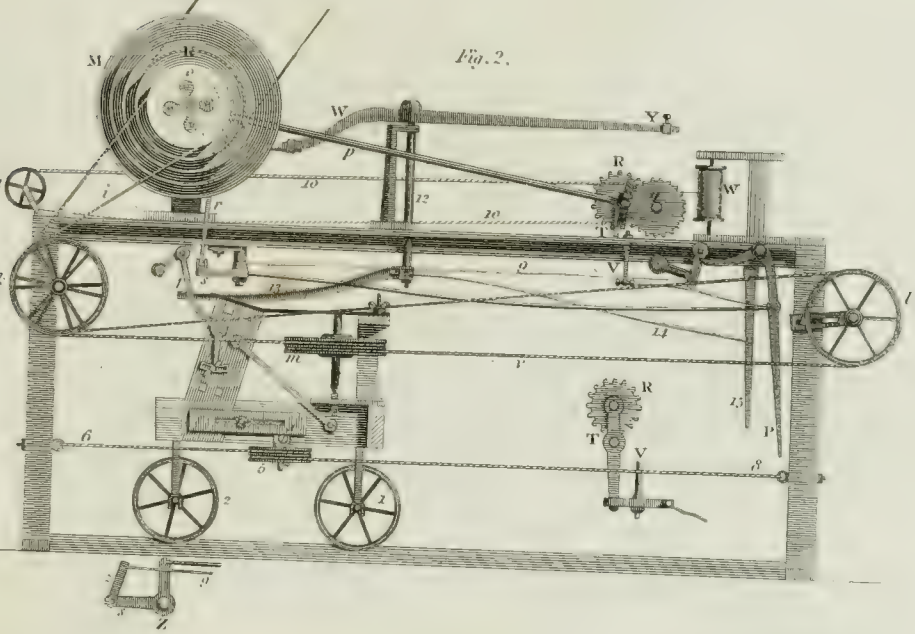

Fig. 3.

Elevation in Front.

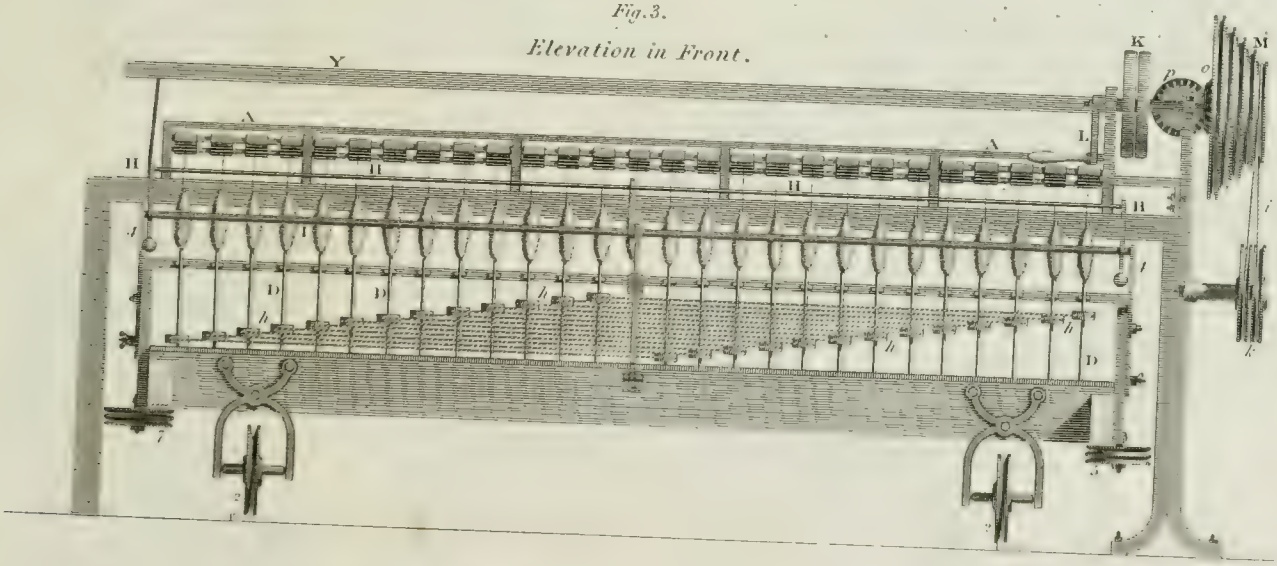

Fig. 4.

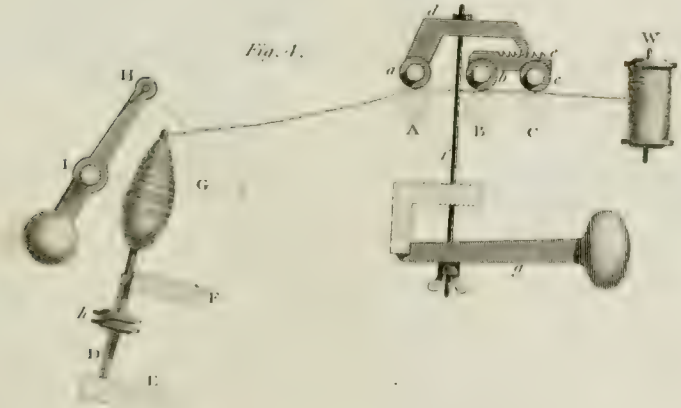

Fig. 5.

I. Farey del.

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W. Lowe.

REELING.

Fig. 1

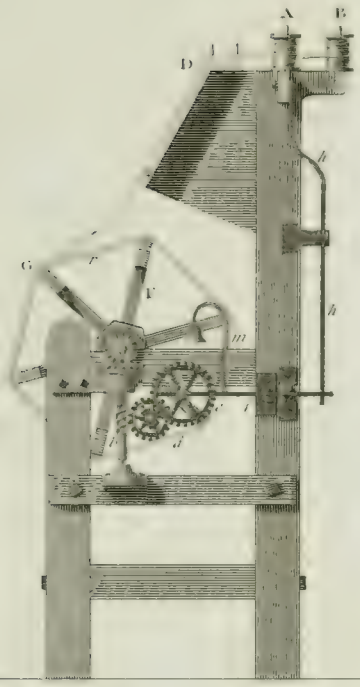
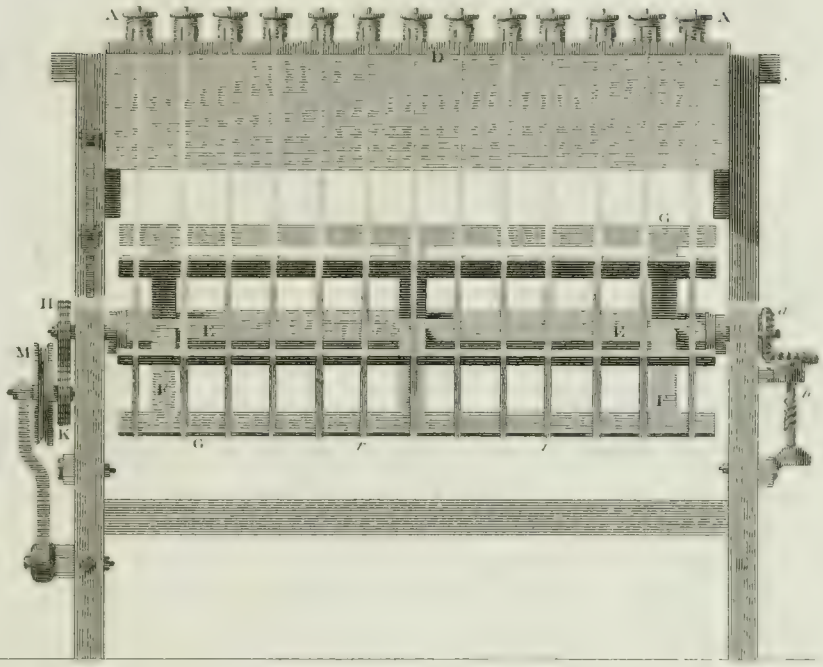


Fig. 2



Machine for winding sewing cotton into Balls

Fig. 4

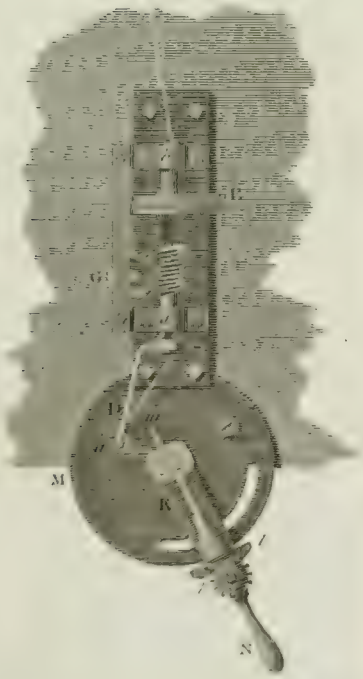
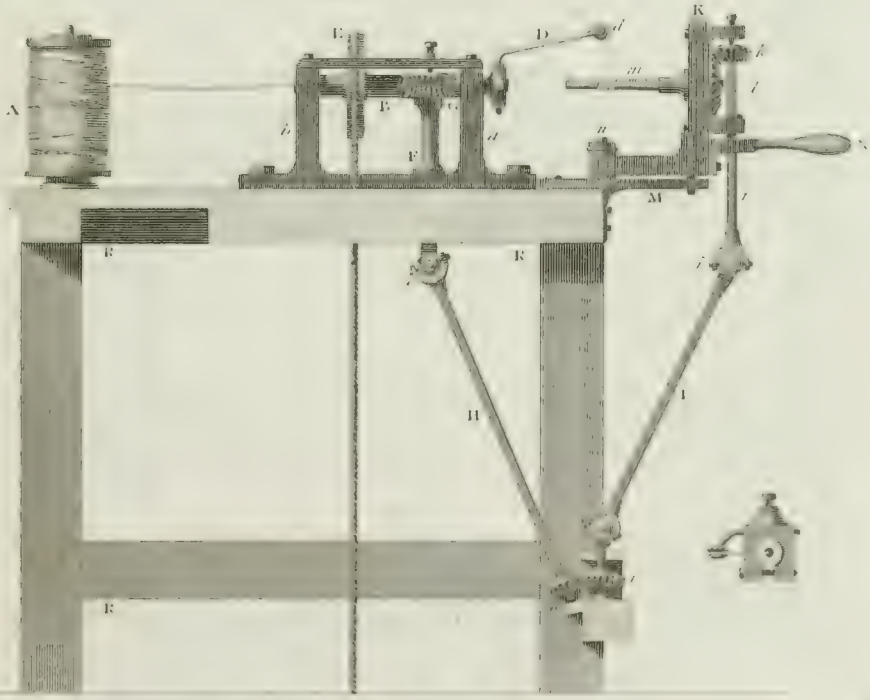


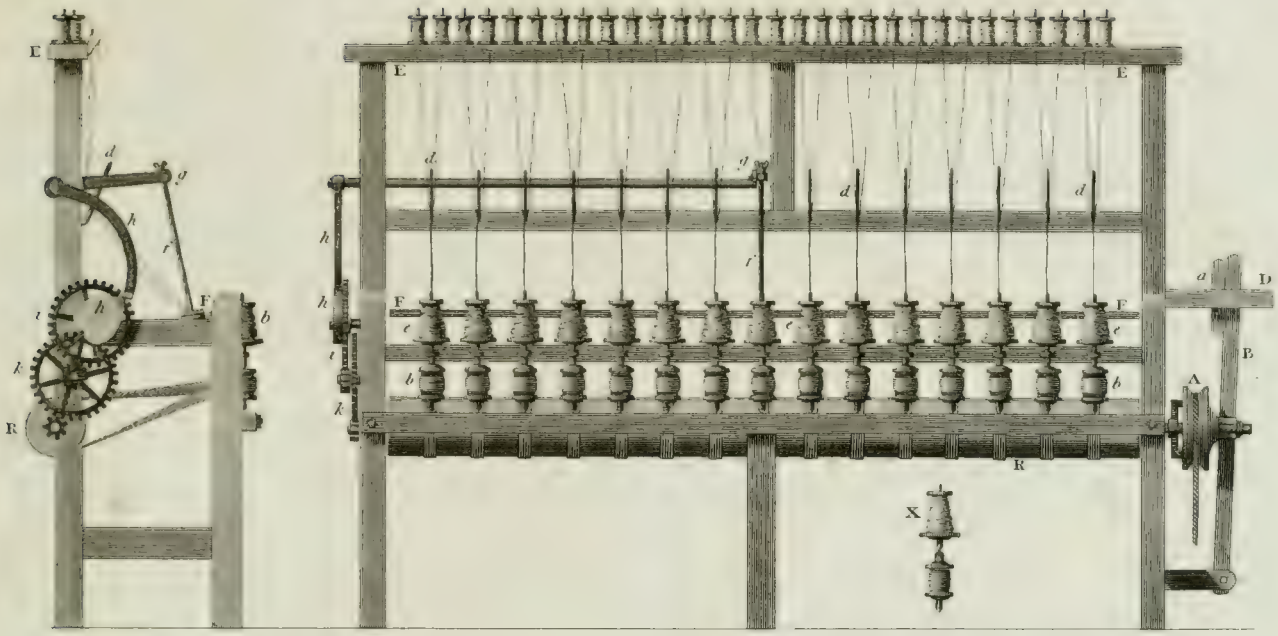
Fig. 3



Published as the Act directs 1st Jan by Longman Hurst Rees Orme and Brown Paternoster

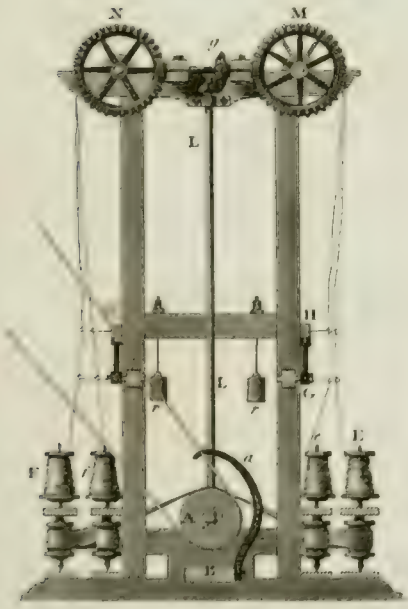
Fig. 2.

Fig. 1. DOUBLING MACHINE.

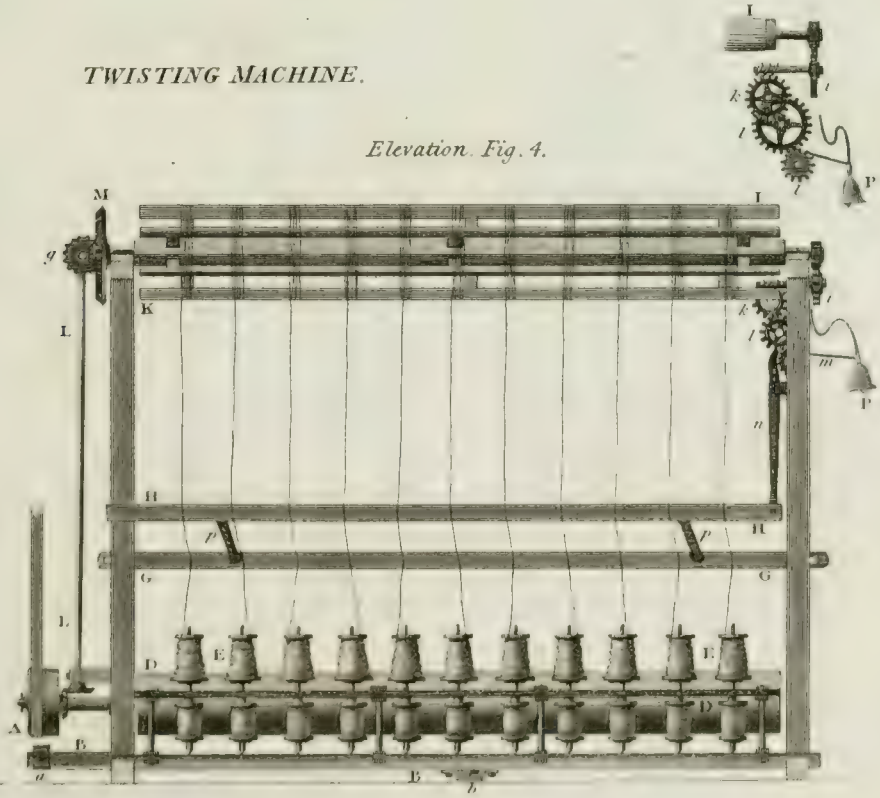


TWISTING MACHINE.

End View. Fig. 3.



Elevation. Fig. 4.



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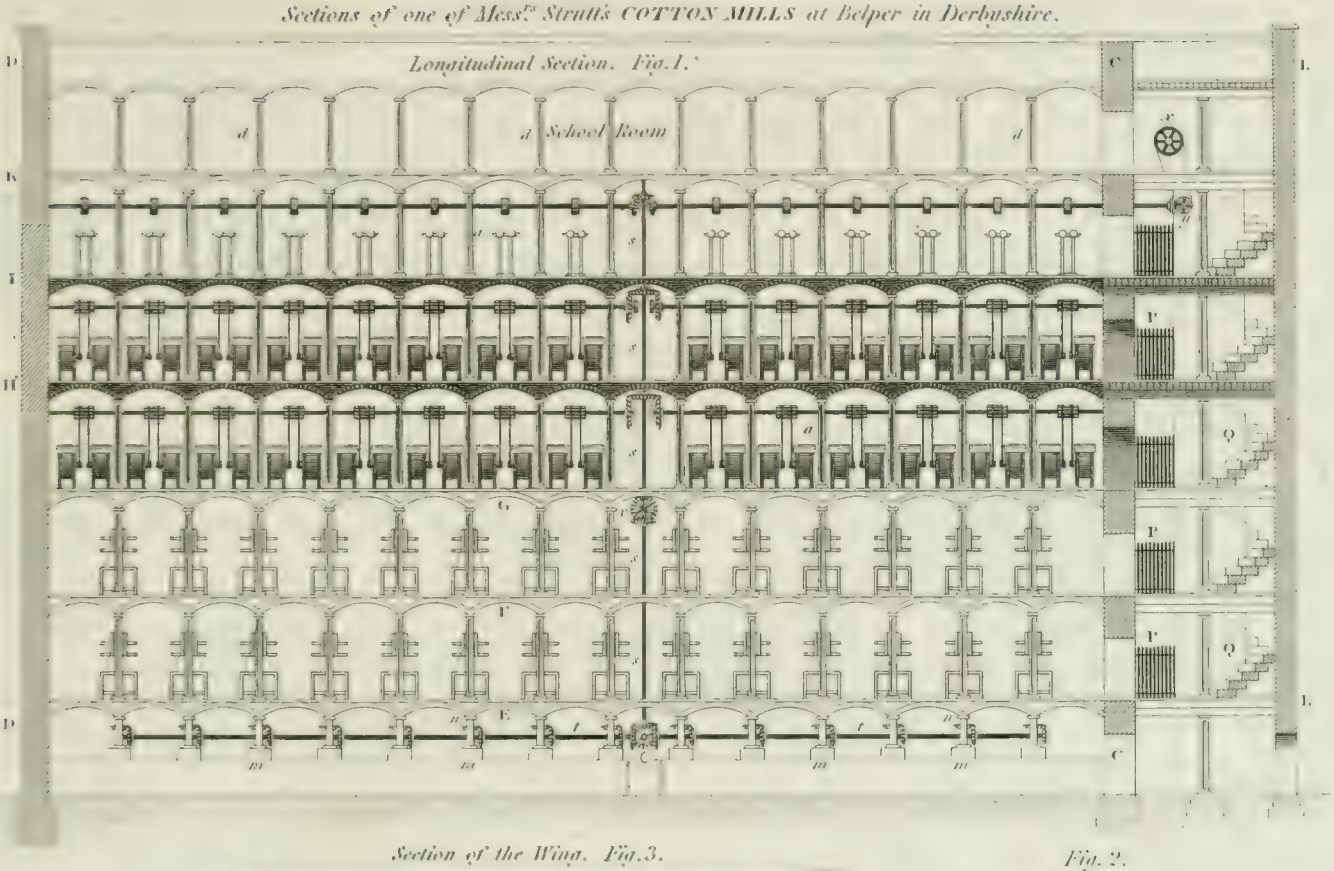
Sections of one of Messrs. Strutt's COTTON MILLS *at Belper in Derbyshire.*

Longitudinal Section. Fig. 1.



Section of the Wing. Fig. 3.

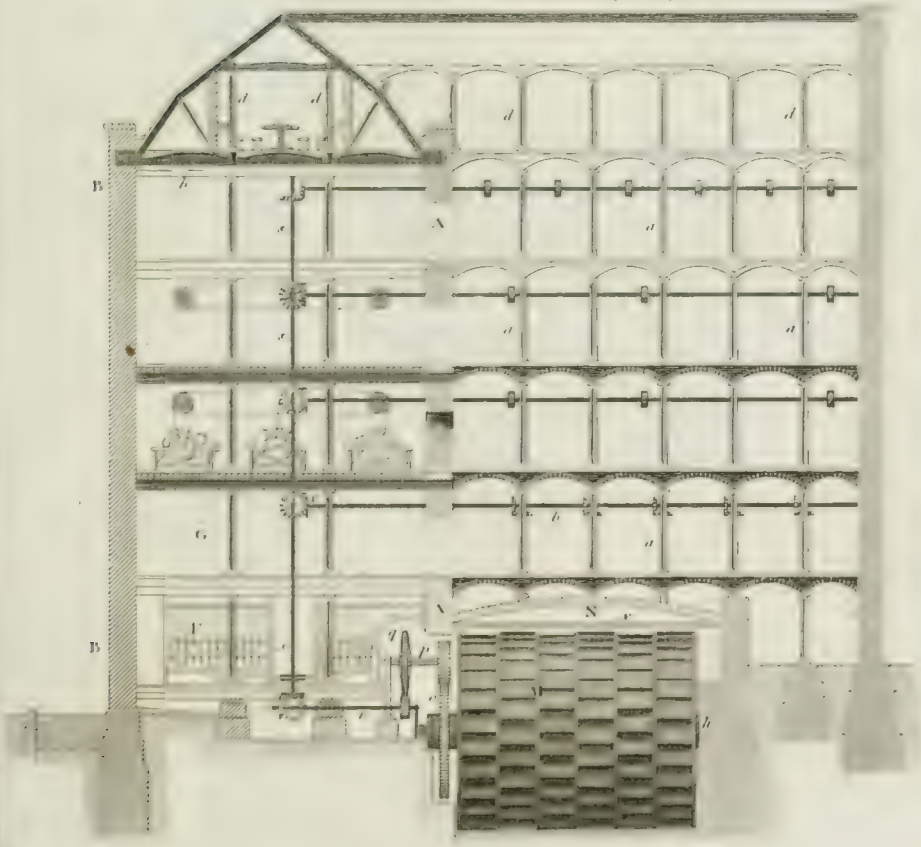


Fig. 2.

Cross Section

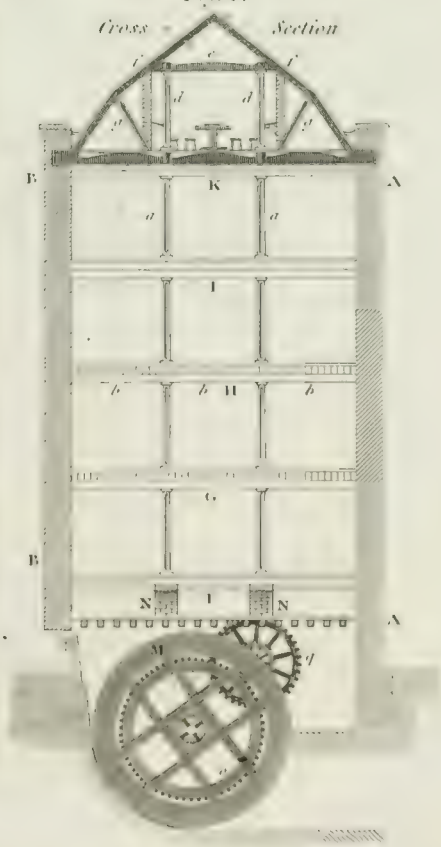


Fig. 1. Two Troughs of a Grinding Mill.

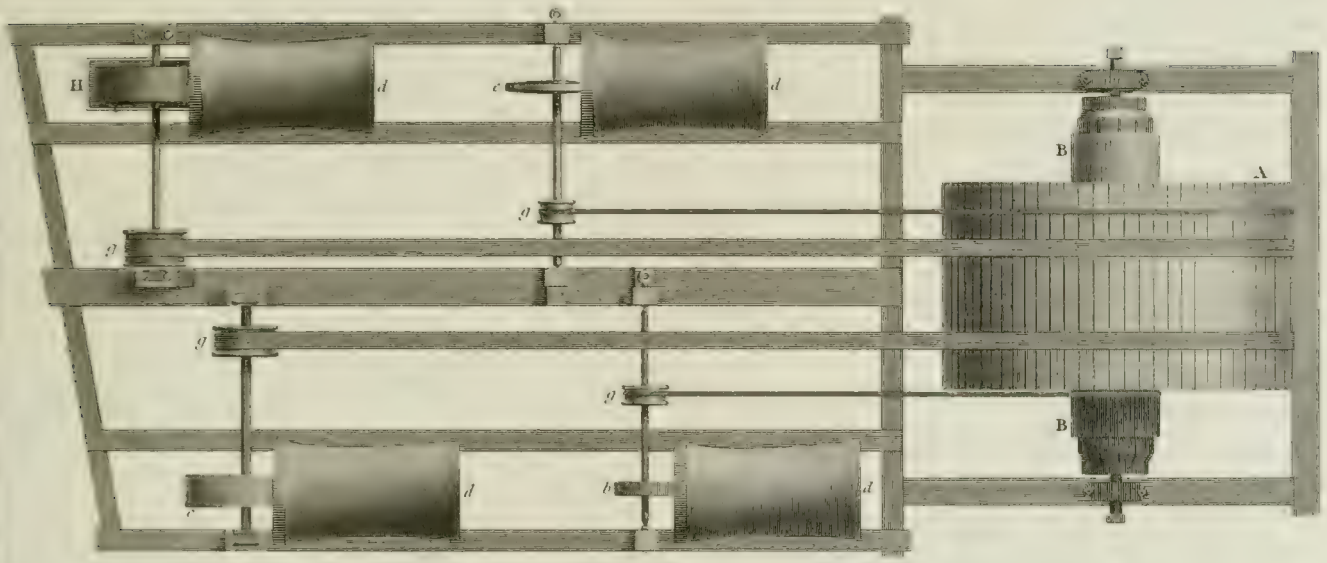


Fig. 3. Pressing Vice.

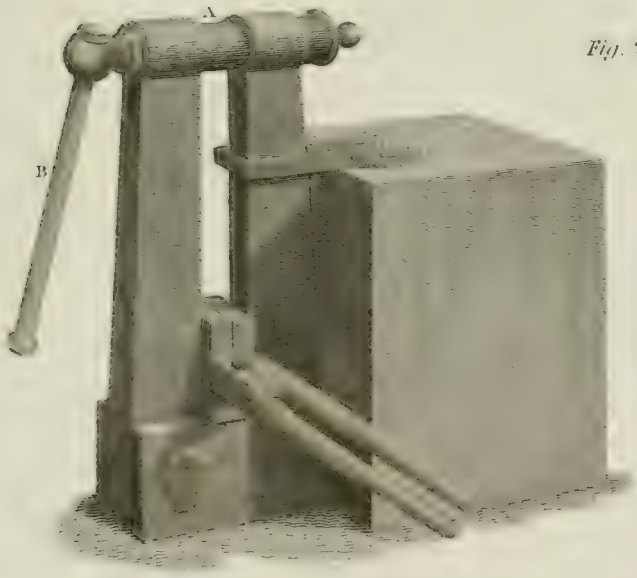


Fig. 2. Tongs for pressing Knife Handles.

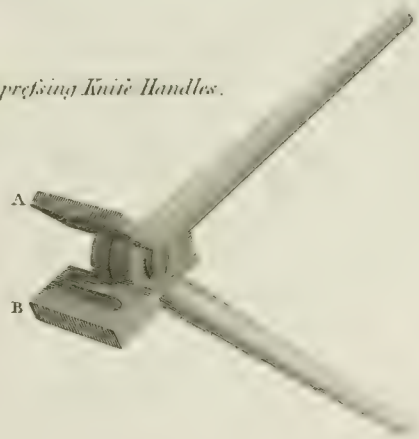


Fig. 2.

Fig. 3. Spring Drill.

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CYCLOID.

Fig. 1.

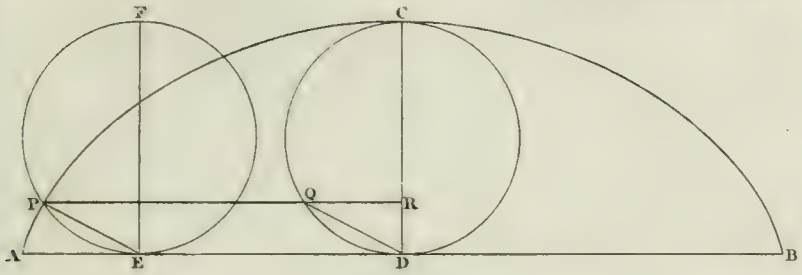


Fig. 2.

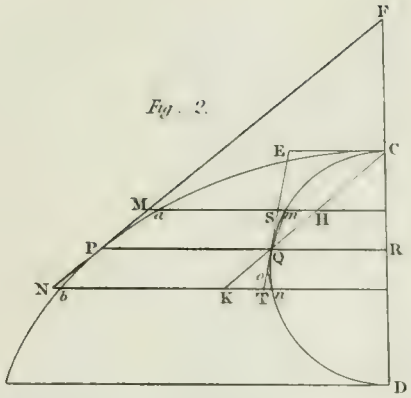


Fig. 3.

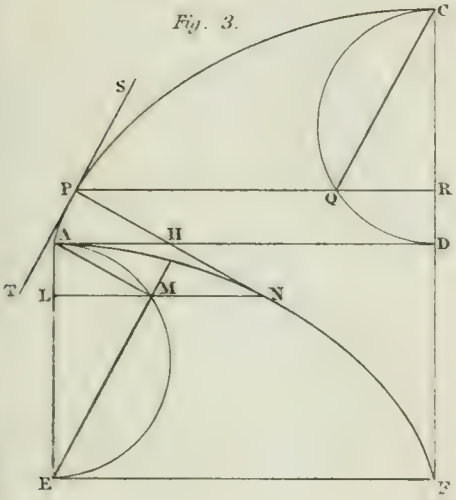


Fig. 4.

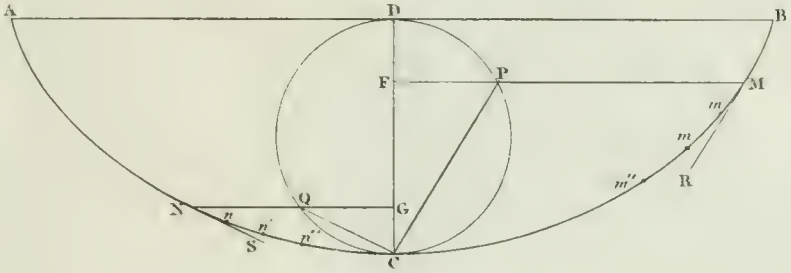


Fig. 5.

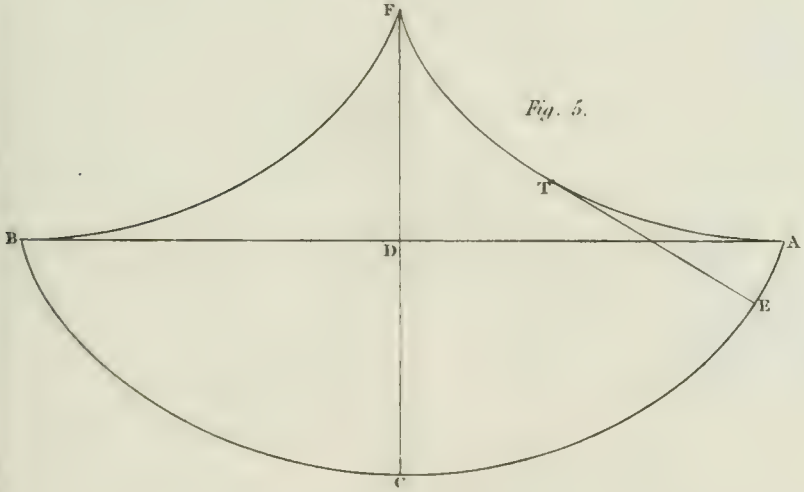


Fig. 6.

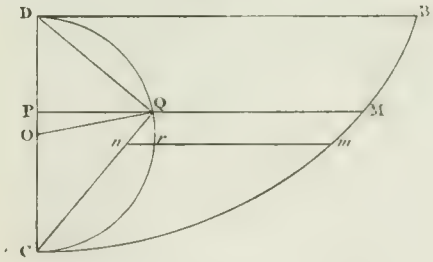


Fig. 8.

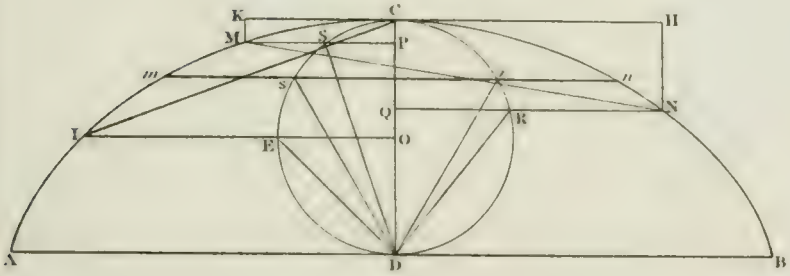
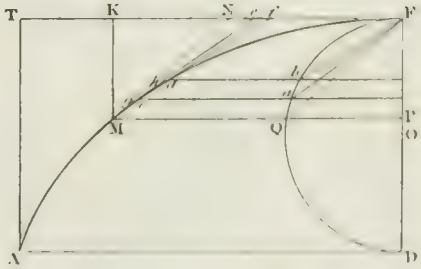


Fig. 7.



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DIALLING.

DECLINATOR.

Fig. 1.

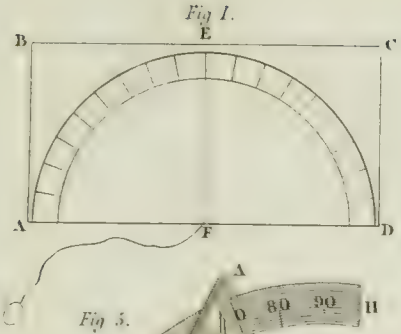


Fig. 9.

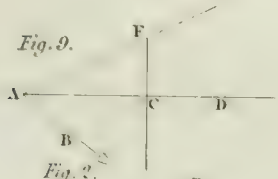


Fig. 3.

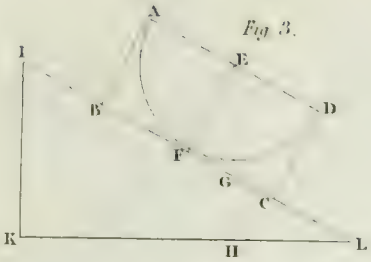


Fig. 2.

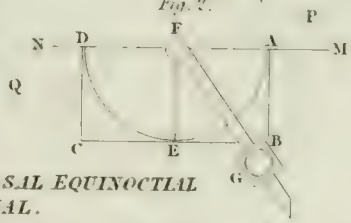
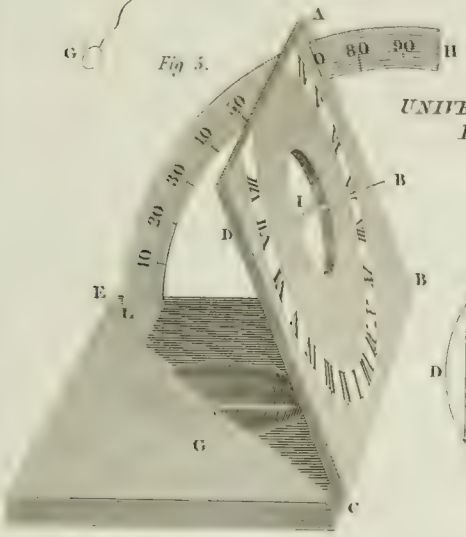


Fig. 5.



UNIVERSAL EQUINOCTIAL DIAL.

Fig. 1.

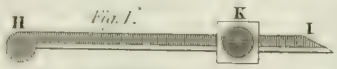
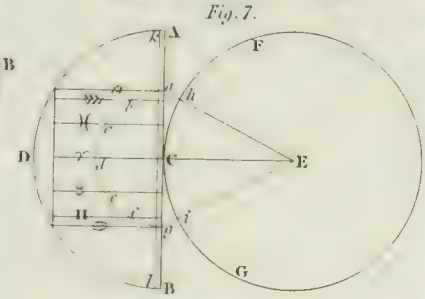
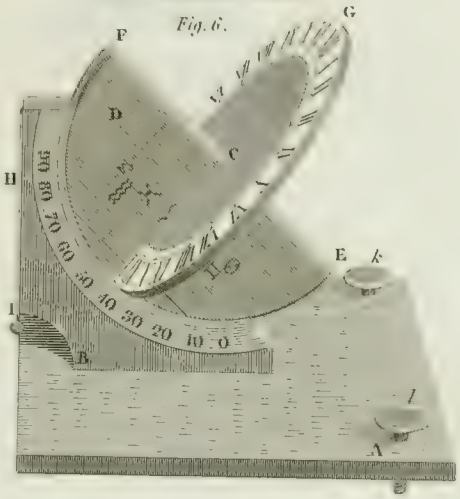


Fig. 7.



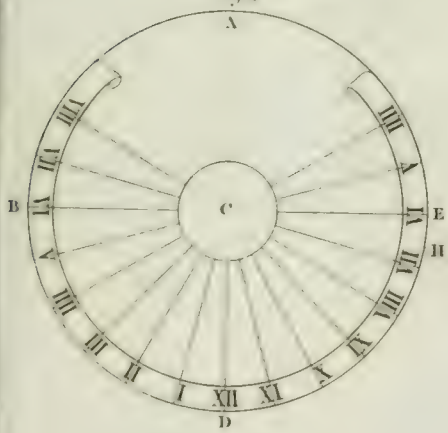
UNIVERSAL DIAL.

Fig. 6.



EQUINOCTIAL DIAL.

Fig. 4.



HORIZONTAL DIAL.

Fig. 8.

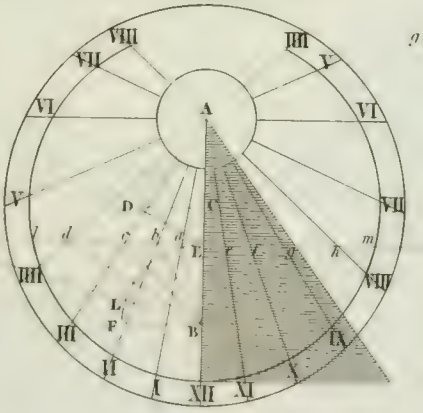


Fig. 10.

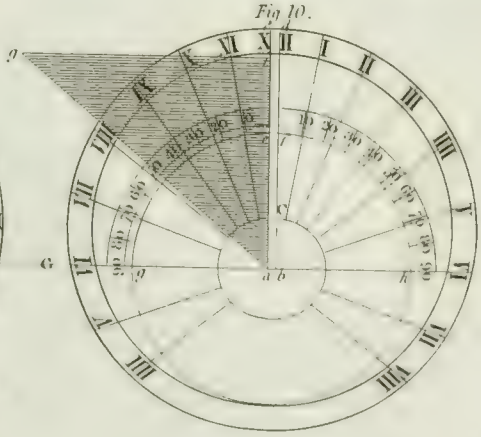


Fig. 11.

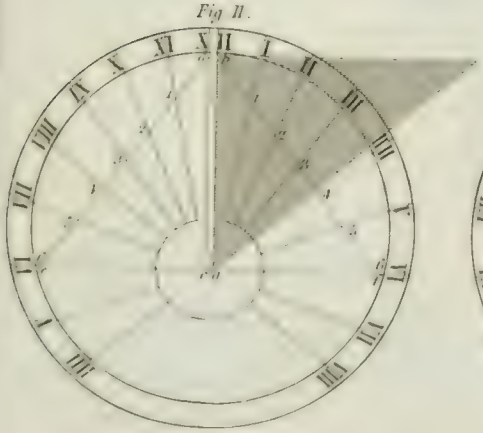
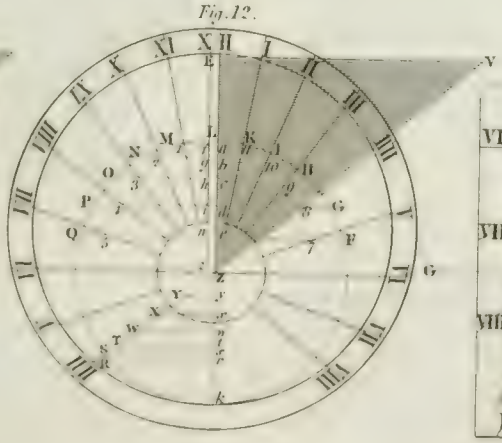


Fig. 12.



VERTICAL SOUTH DIAL.

Fig. 13.

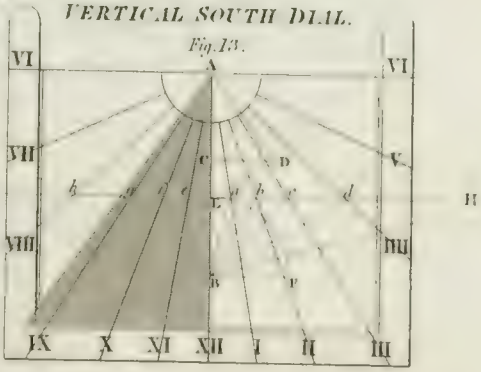


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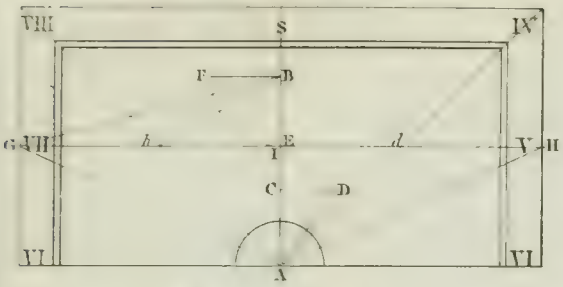
Fig. 14.
VERTICAL NORTH DIAL



POLAR DIAL

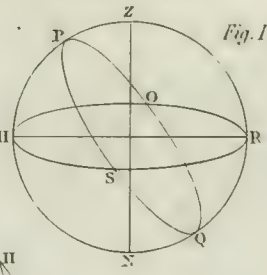


Fig. 17.

Fig. 15.
SOUTH DIAL

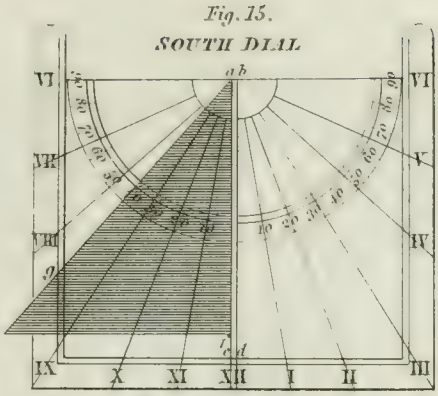


Fig. 16.
EAST DIAL

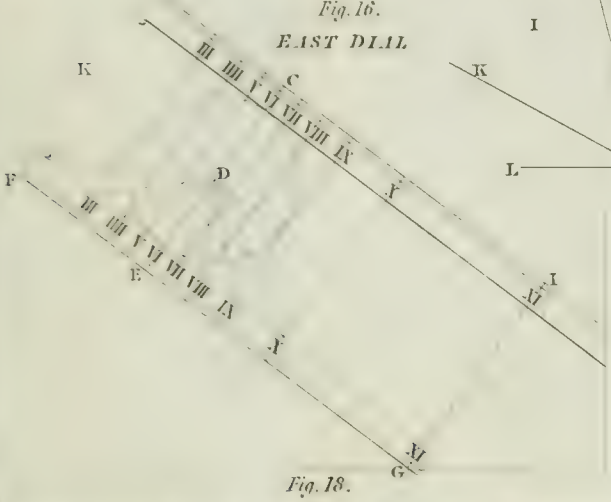


Fig. 23.
INCLINED DIAL

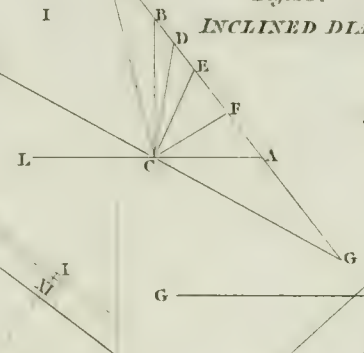


Fig. 22.
VERTICAL DECLINING DIAL

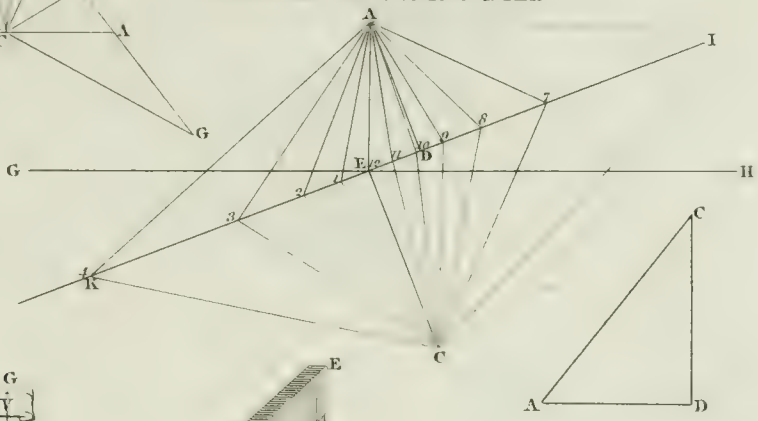


Fig. 18.

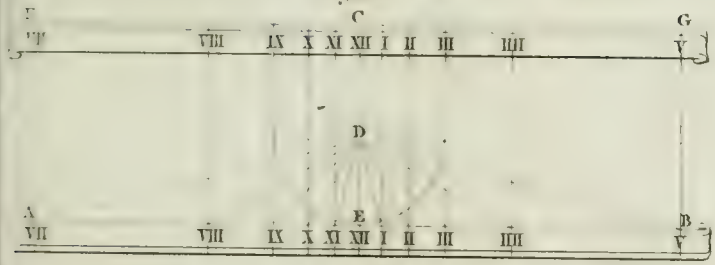
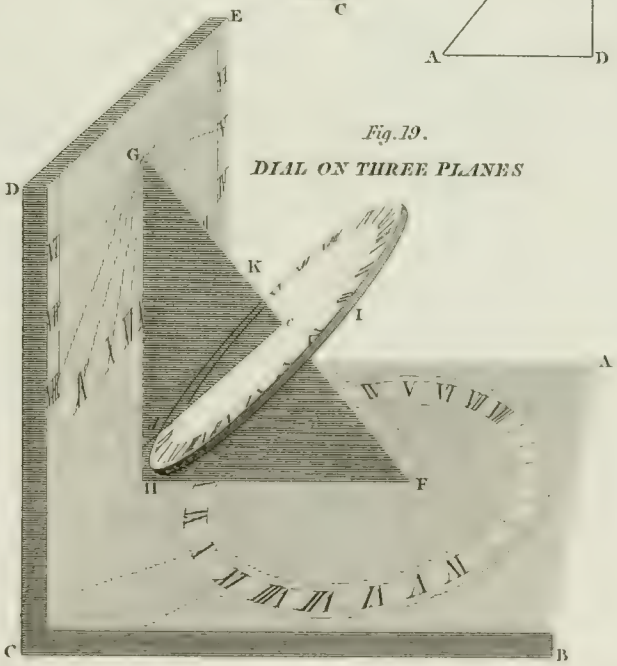


Fig. 19.
DIAL ON THREE PLANES



DIALS

Fig. 20.

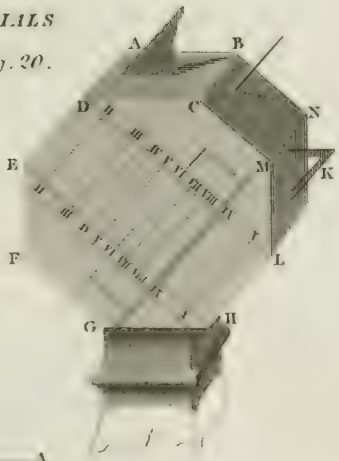


Fig. 24.
UNIVERSAL MECHANICAL DIAL

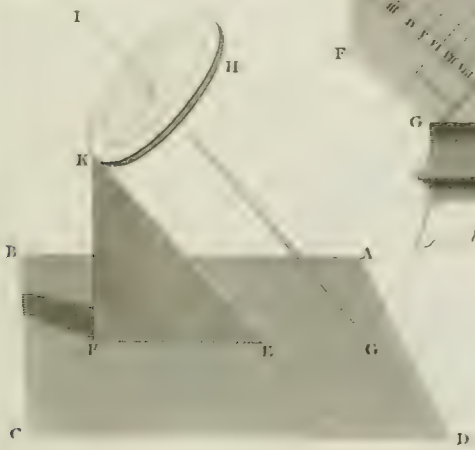
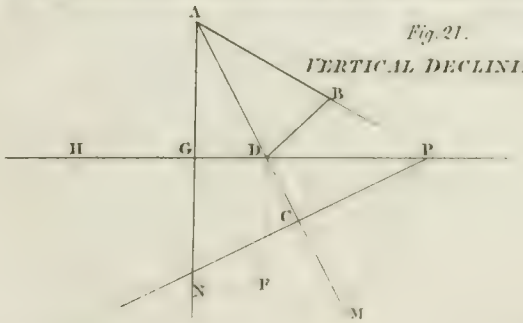


Fig. 21.
VERTICAL DECLINING DIAL



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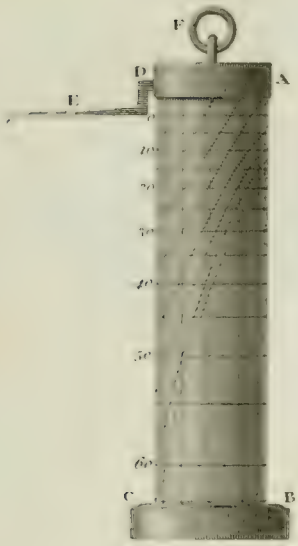
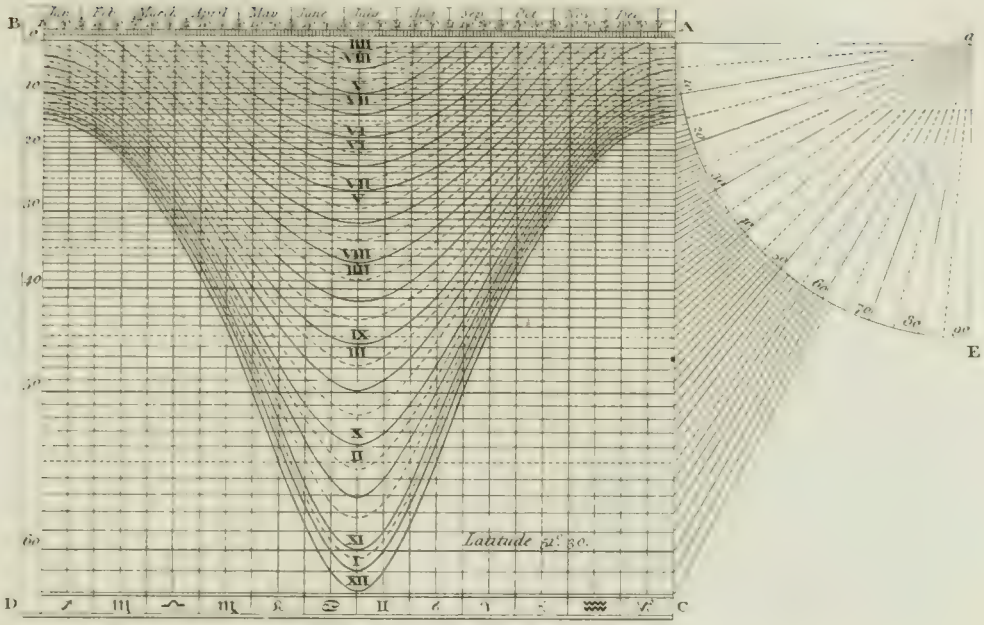
Engraved by Wilson Lowry.

Cylindrical DIAL, Fig. 28.

Fig. 27.





Portable DIAL.

Fig. 29.

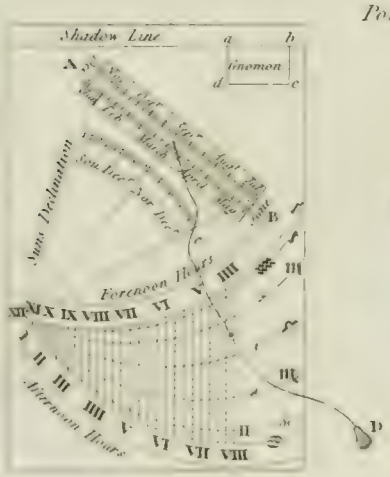


Fig. 30.

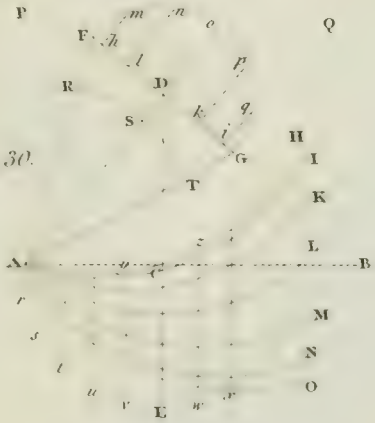
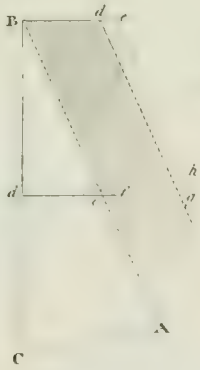


Fig. 32.



Universal DIAL on a Cross.

Fig. 31.

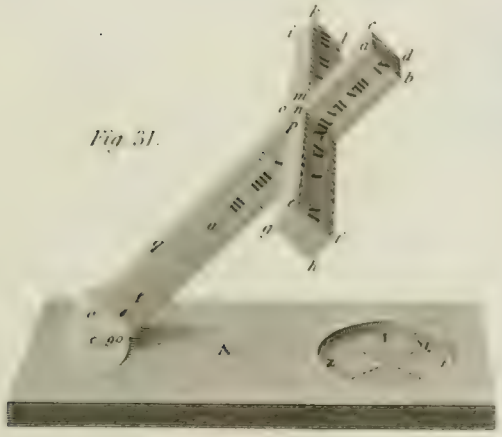
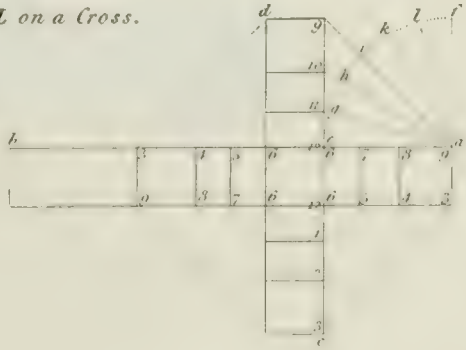


Fig. 33.



Published as the Act directs 1813 by Longman, Hurst Rees, Orme & Brown, Paternoster Row London.

Lewis sculp.

Fig. 33

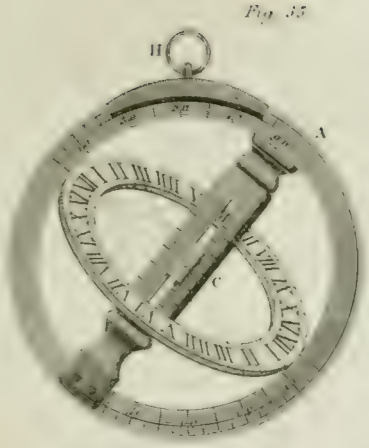


Fig. 25. PL. II.

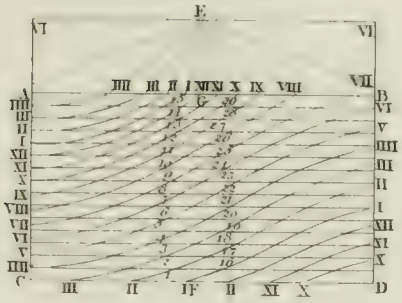


Fig. 26. PL. II.

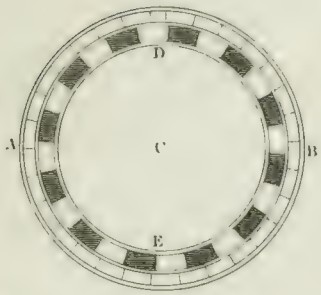


Fig. 37

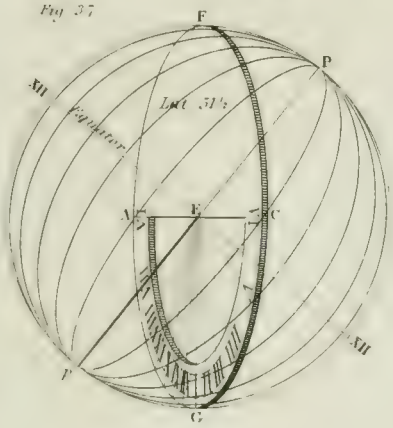


Fig. 36

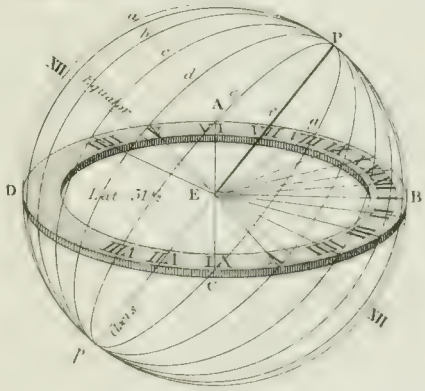


Fig. 34

Ring Dial

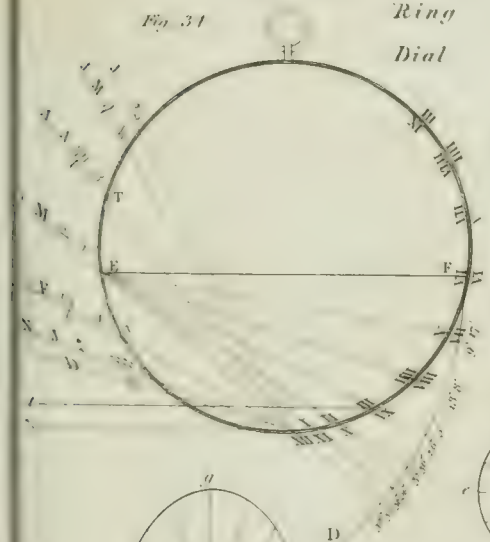
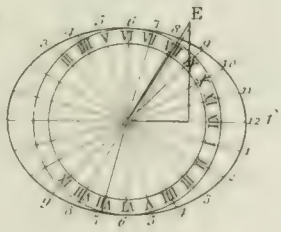


Fig. 40



Dialling Cylinder

Fig. 38

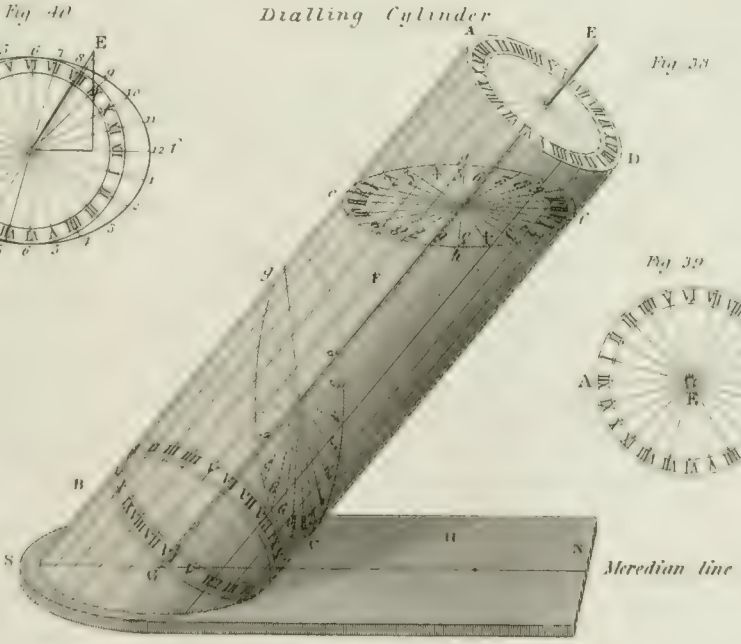


Fig. 41

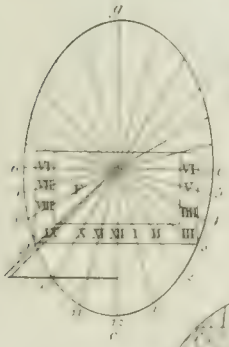
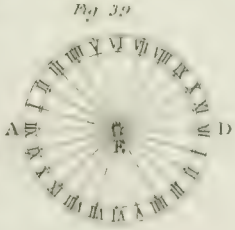
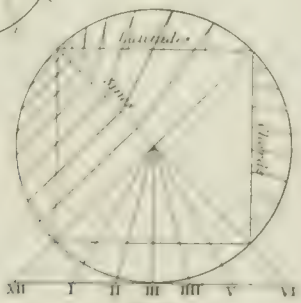


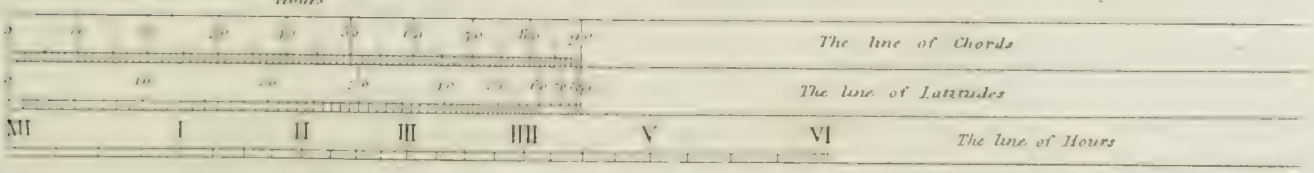
Fig. 39





Dialling Scales

Fig. 42



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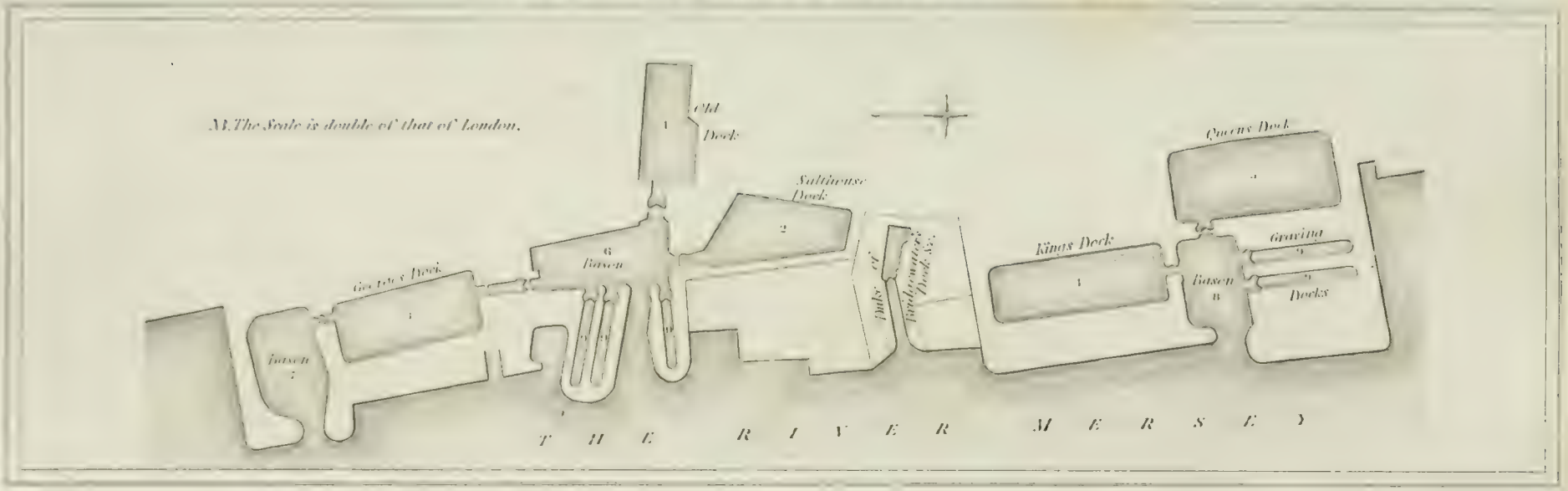
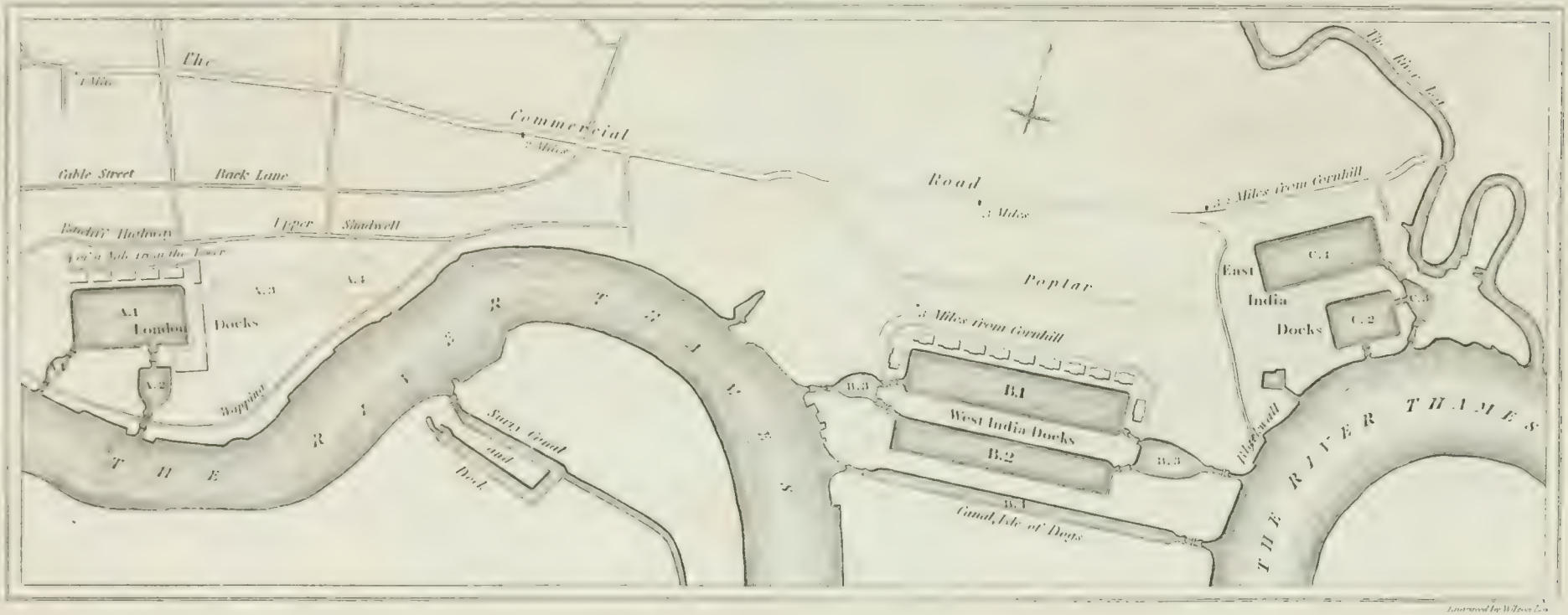
Lowry Sculp.

PLAN OF THE DOCKS AT LIVERPOOL, IN 1805.



PLAN OF THE DOCKS AT LONDON, IN 1808.



Published June 1st 1809 by Longman Hurst Rees and Orme, Paternoster Row, London.

Engraved by Wilson

H. Howard Esq. R.A. del.

Published as the Act directs Jan 1 1810 by Longman Hurst Rees Orme & Brown Paternoster Row

From a Bust in the Collection of Charles Townley Esq.r

Drawn by H. Howard R.A. *Published as the Act directs, Jan.y 2.d 1809, by Longman & Rees, Paternoster Row.* *Engraved by C. Knight*

Plate 3.

From an original Drawing by Gaspar Poussin in the collection of Benjamin West Esqr P.R.A.

Laporte fecit

From an original Drawing by Gaspar Poussin in the Collection of Benjamin West Esq.r P.R.A.

Pd by Longman Hurst, Rees & Orme, Paternoster Row, May 26th 1809

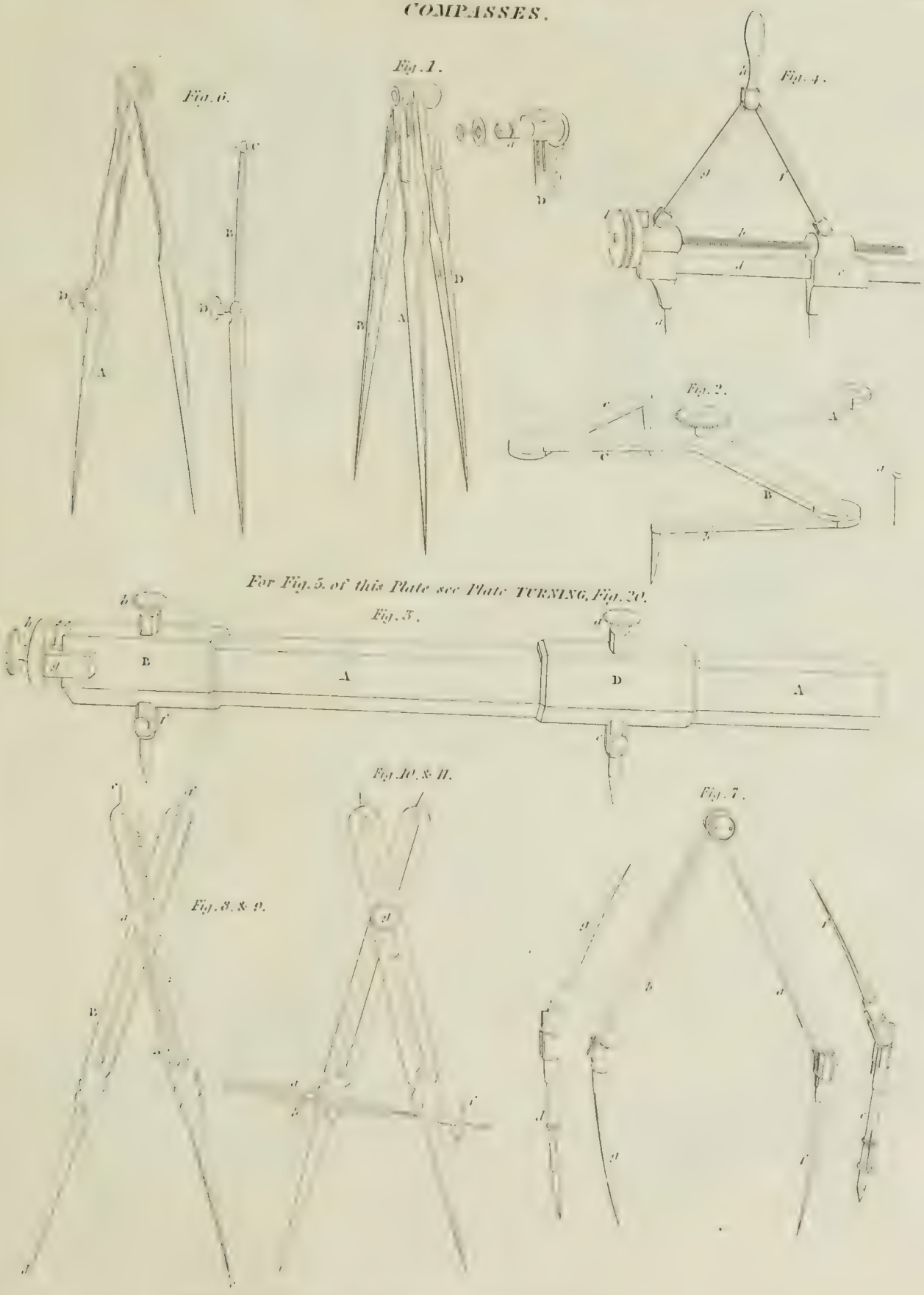
PLATE X

From an Original Drawing in the Collection of the Duke of Devonshire

Published by Act directs. Jan. 1. 1810. by Longman Hurst Rees Orme & Brown Paternoster Row

DRAWING INSTRUMENTS.

COMPASSES.



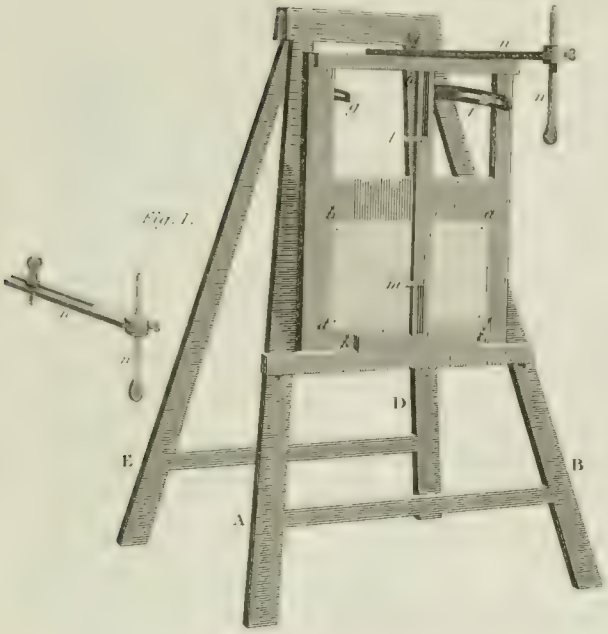
Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Engraved by Wilson Lowry.

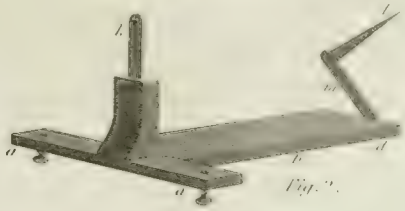
DRAWING INSTRUMENTS.

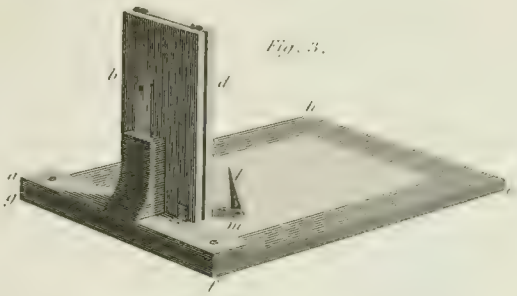
DELINEATORS.

Mr. Peacock's delineator.

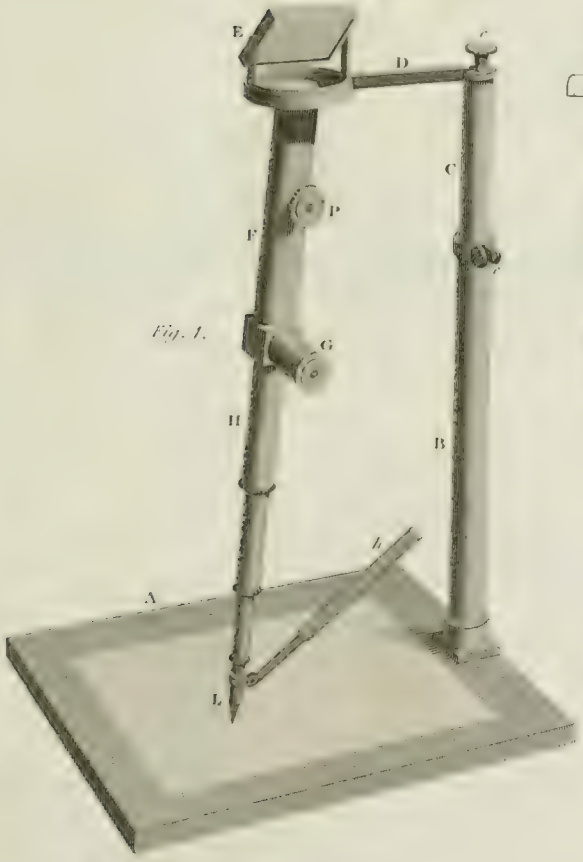


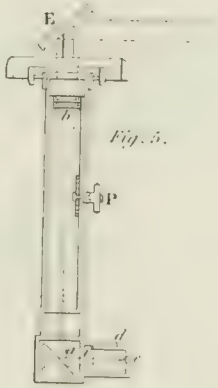
Miss Edgeworth's delineator.



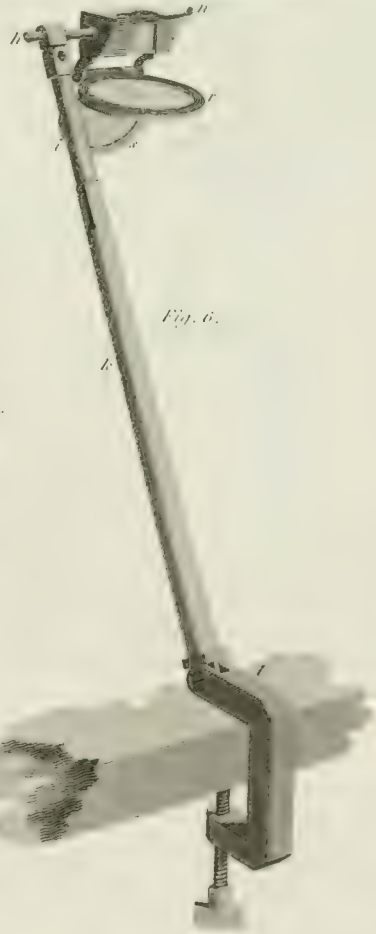


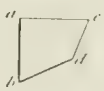
Ramsden's Optigraph improved by Thos. Jones.

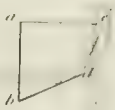




Mr. Wollaston's Camera Lucida.







Drawn by J. Farey Junr.

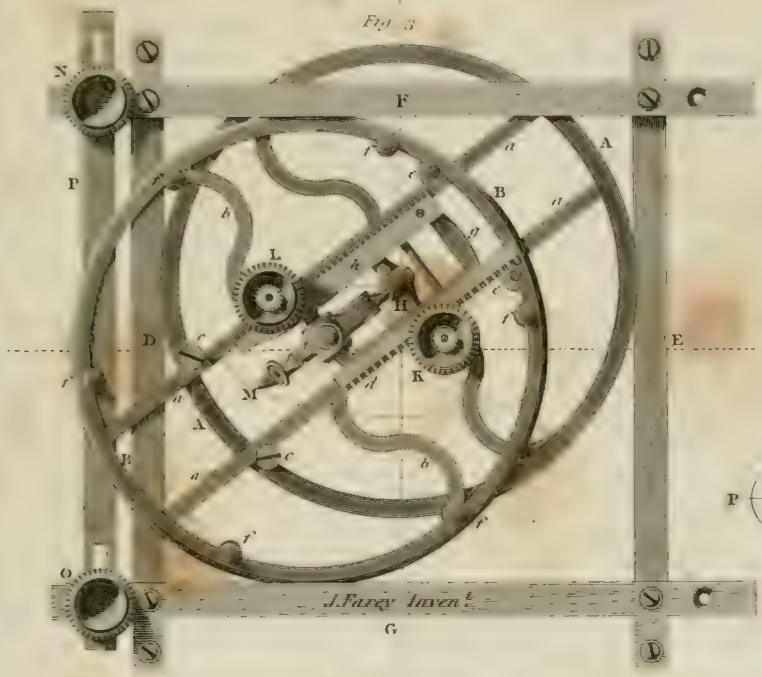
Published as the Act directs, 1812, by Longman, Hurst, Rees, Orme and Brown, Paternoster Row, London.

Engraved by W. Lewis.

DRAWING INSTRUMENTS.

OVAL.

Mr. Farey's, Elliptograph for drawing Ellipses.



Oval — Fig. 1.

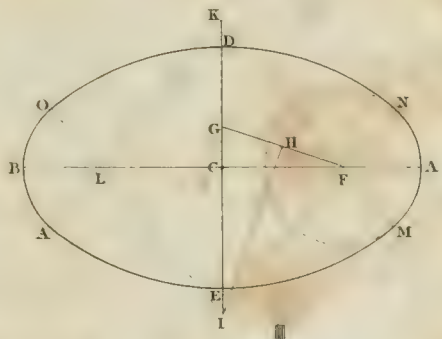
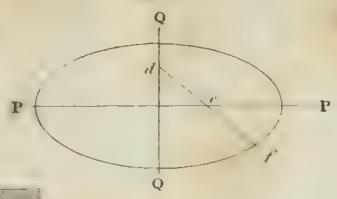
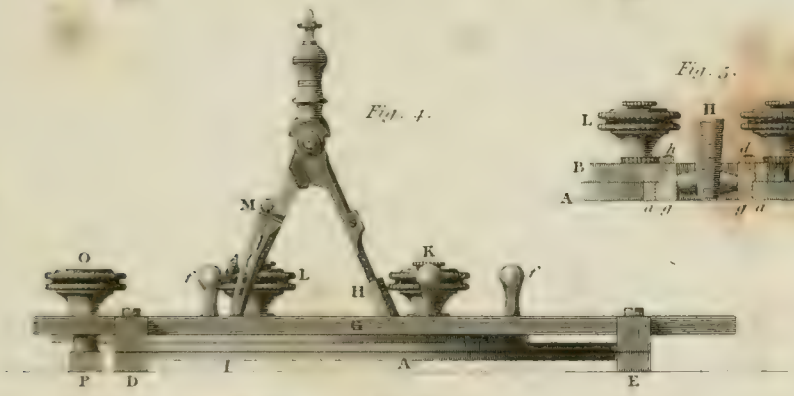
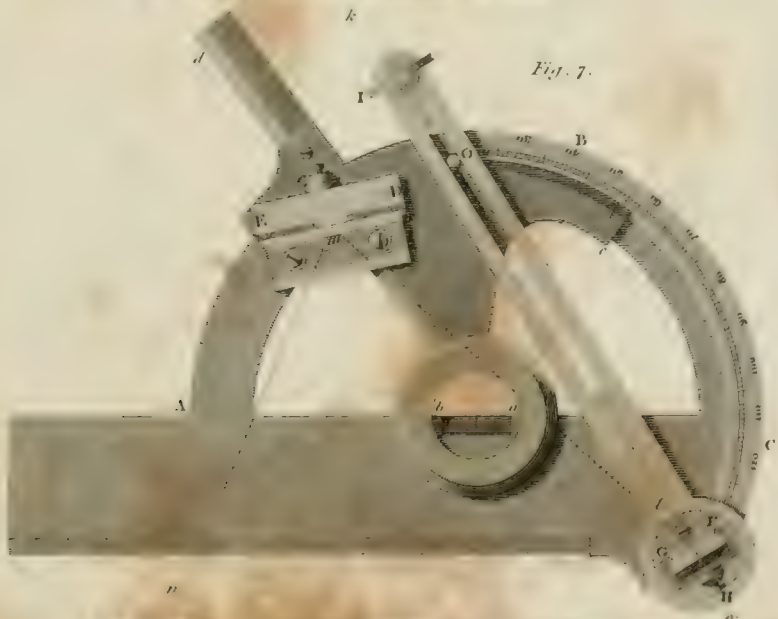


Fig. 6.





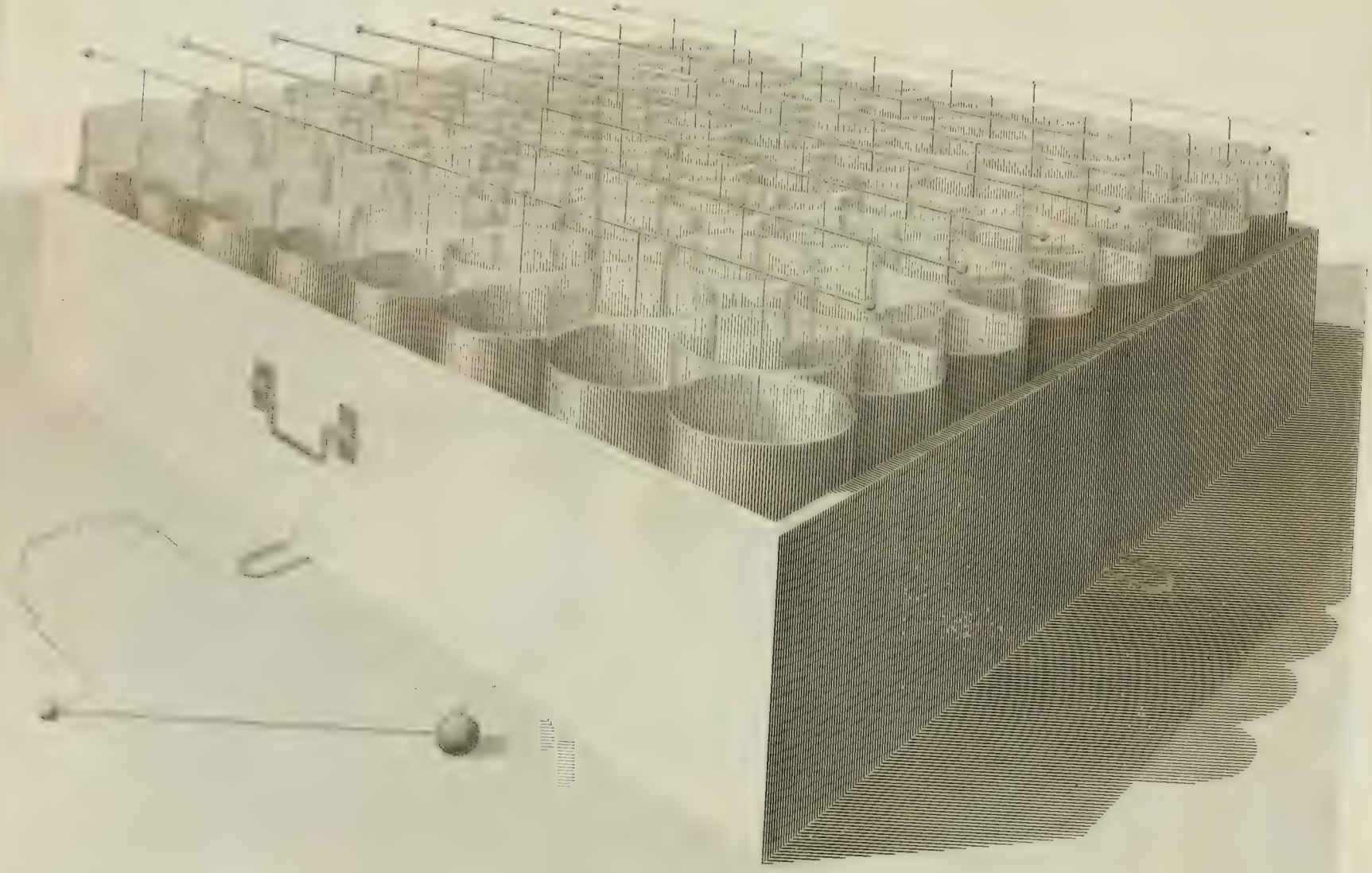
Sir Howard Douglas's, Reflecting Protractor.



Farey delin. Published A.D. the Act directs, 1815, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Lowry sculp.

PRIESTLEY'S BATTERY.

PLATE I.



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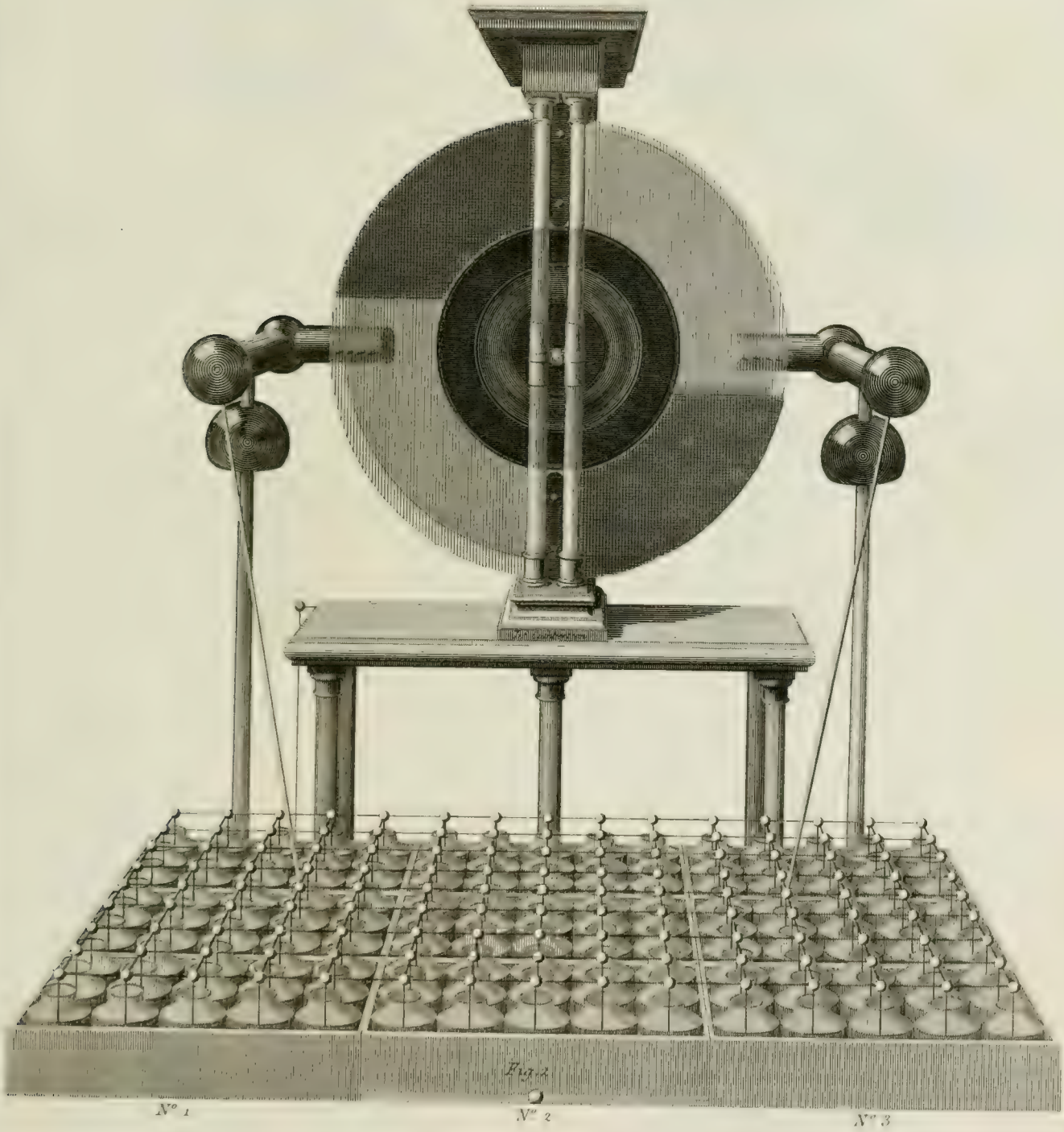
Engraved by Wilson Lowry

ELECTRICITY.

ELECTRICAL MACHINE & BATTERY.



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CONDENSERS.

Fig. 4

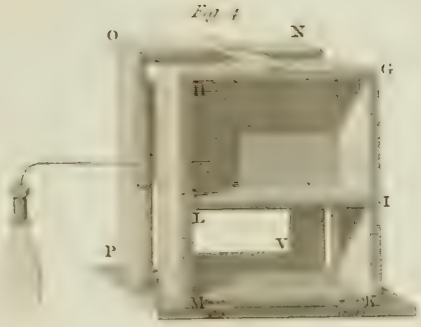

Fig. 5

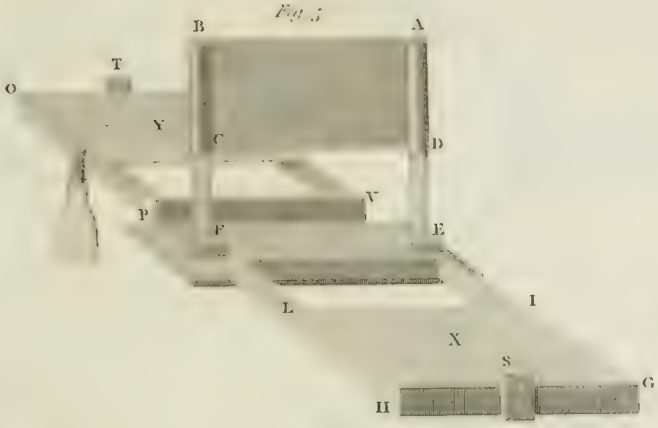

Fig. 6

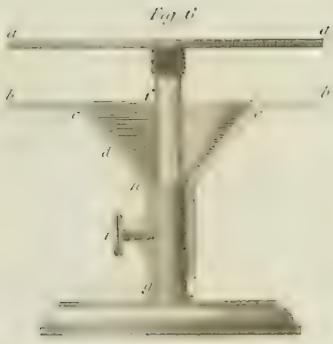

Fig. 7

Fig. 8

Fig. 9

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ELECTRICITY.

DISCHARGER AND DOUBLER.

Fig. 10.

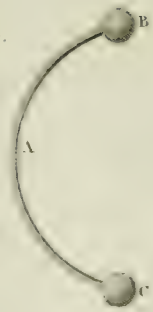
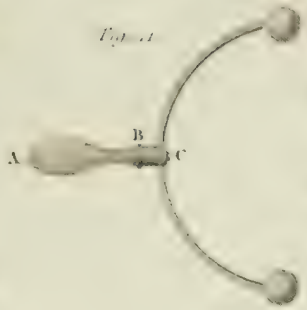


Fig. 11.



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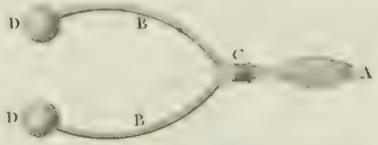

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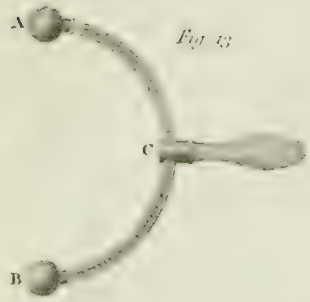

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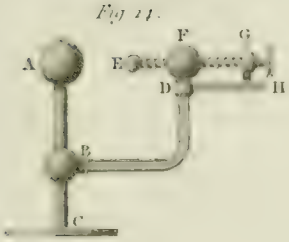
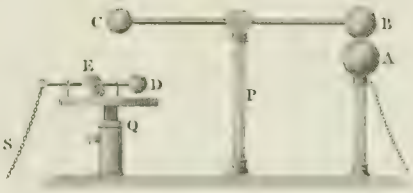


Fig. 15.

Fig. 16.



Mr. CAVALLO'S DOUBLER.

Fig. 23.

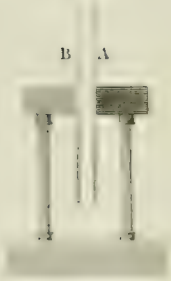
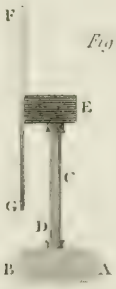


Fig. 22.

Fig. 21.



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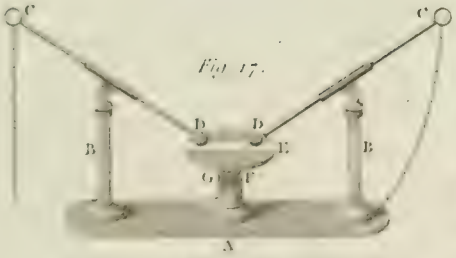

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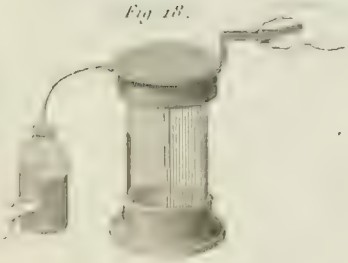

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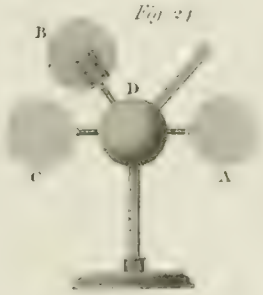

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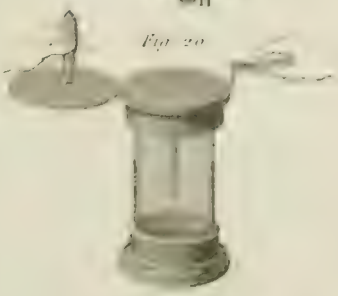


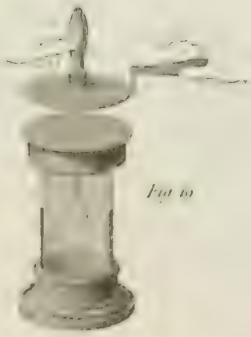
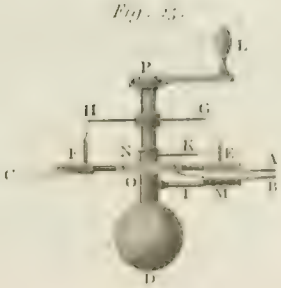


Fig. 10.

Fig. 25.



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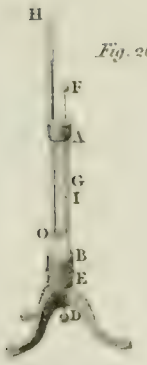
ELECTRICAL EXPERIMENTS.



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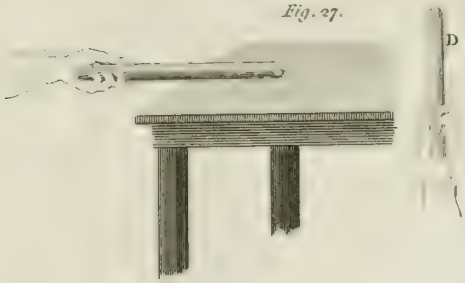

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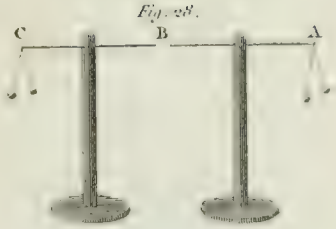

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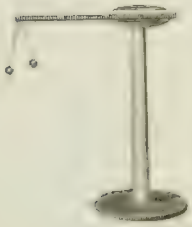

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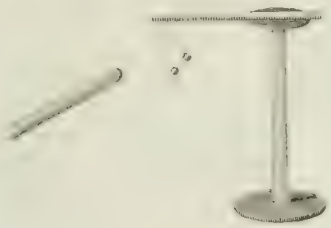

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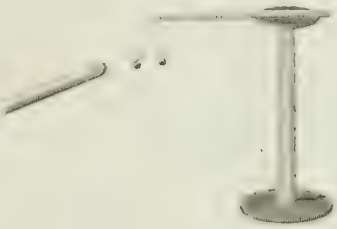
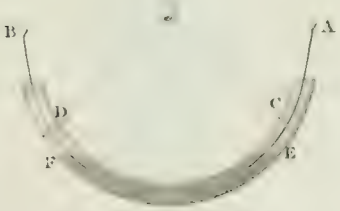


Fig. 31.

Fig. 32

Fig. 33.



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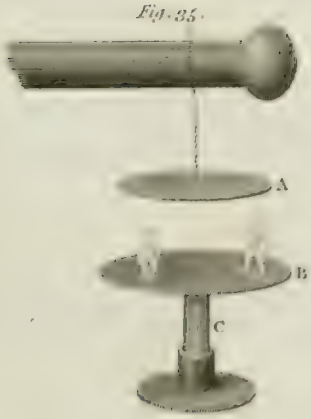

Fig. 35.

Fig. 36

Fig. 37.

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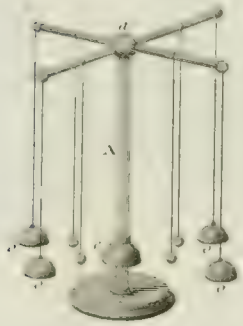
ELECTRICAL EXPERIMENTS.

Fig. 38.

Fig. 39.



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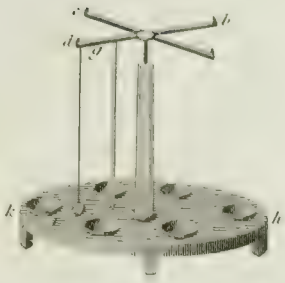

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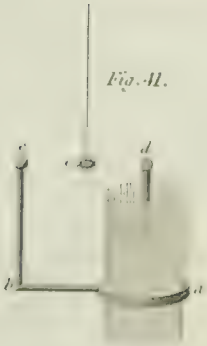

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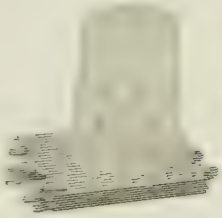

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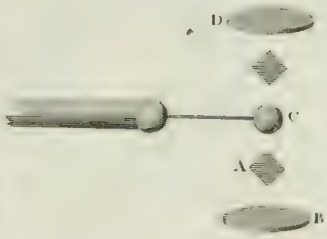

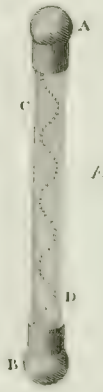

Fig. 44.

Fig. 45.

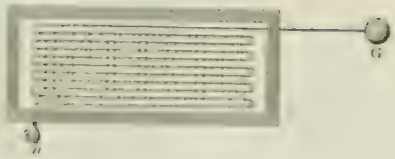

Fig. 46.

Fig. 47.

Fig. 48.

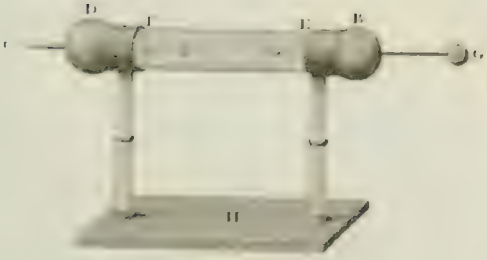

Fig. 49.

Fig. 50.

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ELECTRICITY.

PLATE

CONFIGURATIONS.

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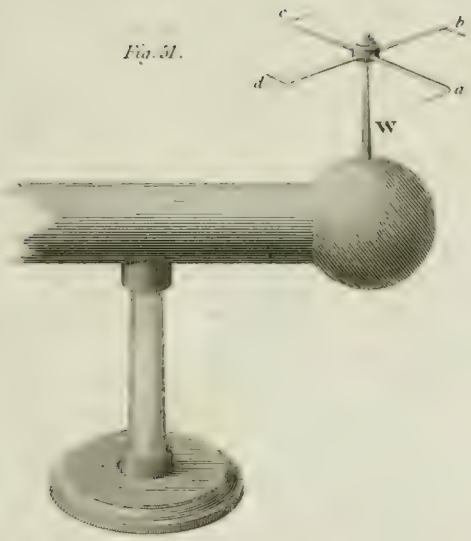
ELECTRICITY.

EXPERIMENTS.

Fig. 51.



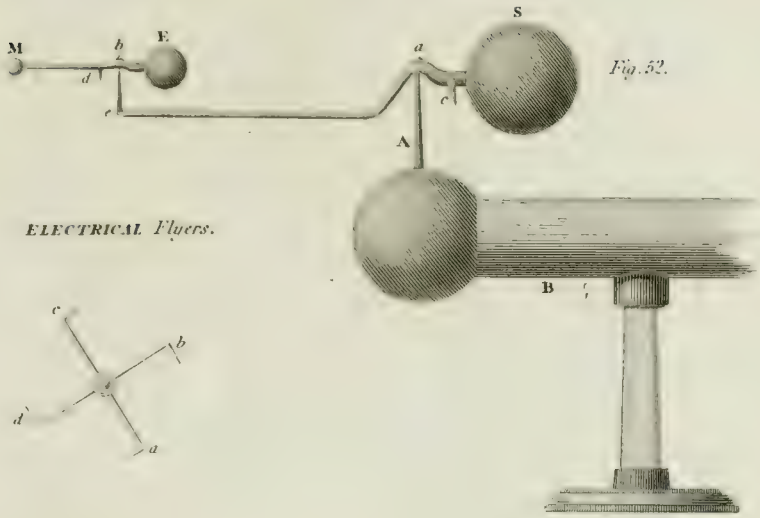


Fig. 52.

ELECTRICAL Flyers.

Fig. 53.

INFLAMMABLE AIR Pistol.

Fig. 54.

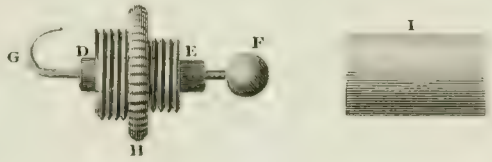
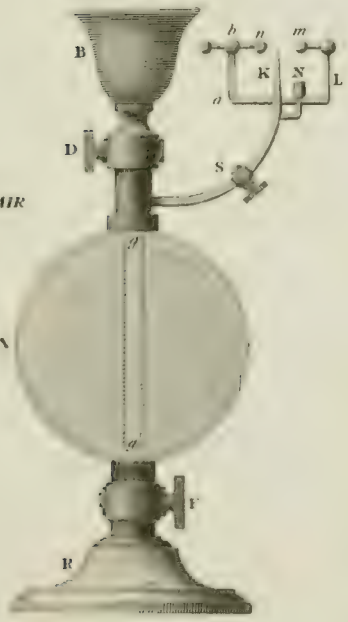


Fig. 55.

Mr Volta's INFLAMMABLE AIR Lamp.



ELECTROPHORUS.

Fig. 2.

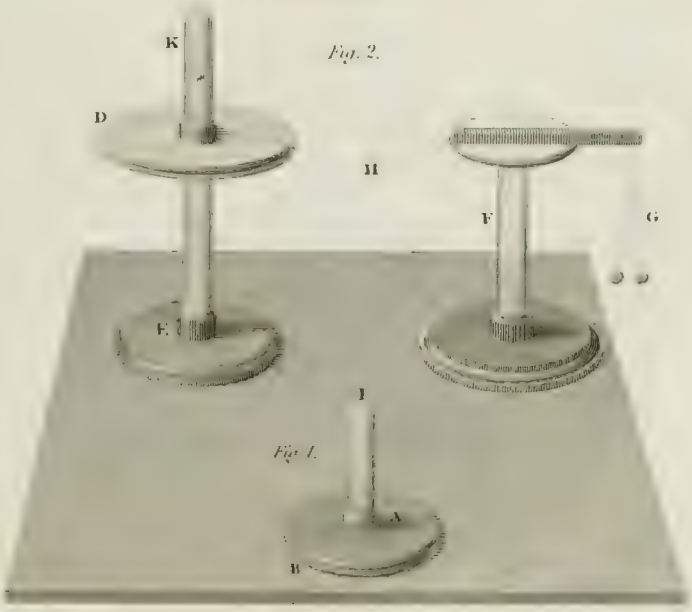


Fig. 1.

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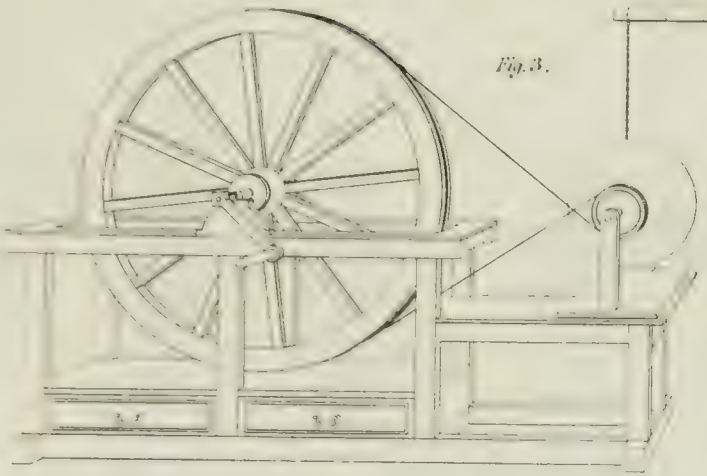
Lowry sculp

ELECTRIC MACHINES.

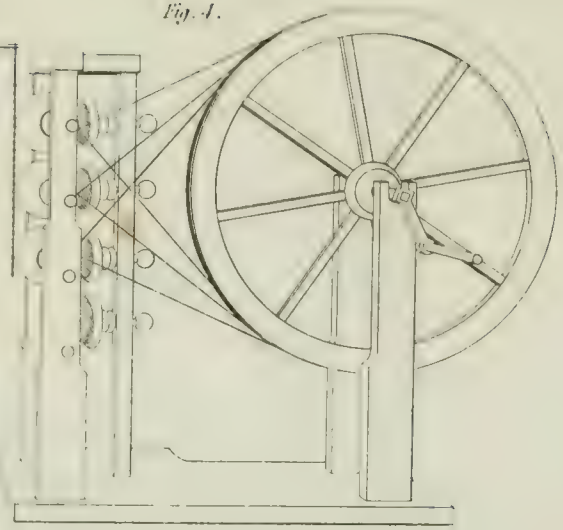
ABBE NOLLET'S.

Fig. 3.



Dr WATSON'S.

Fig. 4.



Mr HAWKSBEE'S.

Fig. 2.

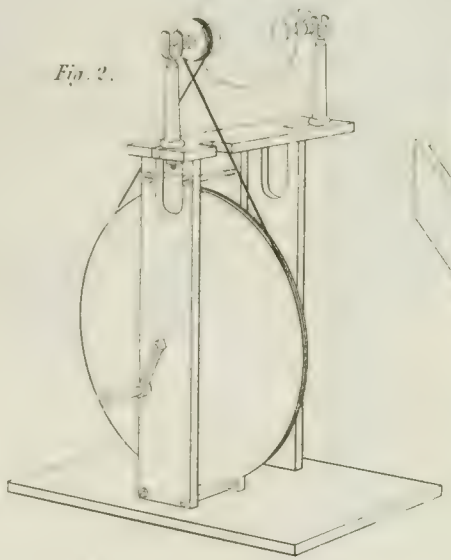
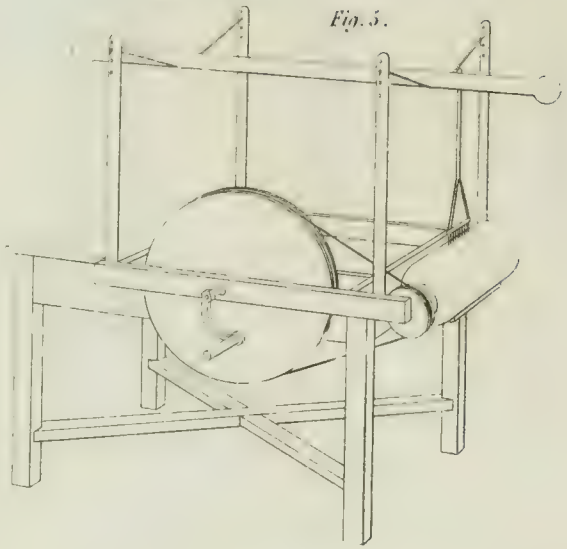


Fig. 1.

Mr WILSON'S.

Fig. 5.



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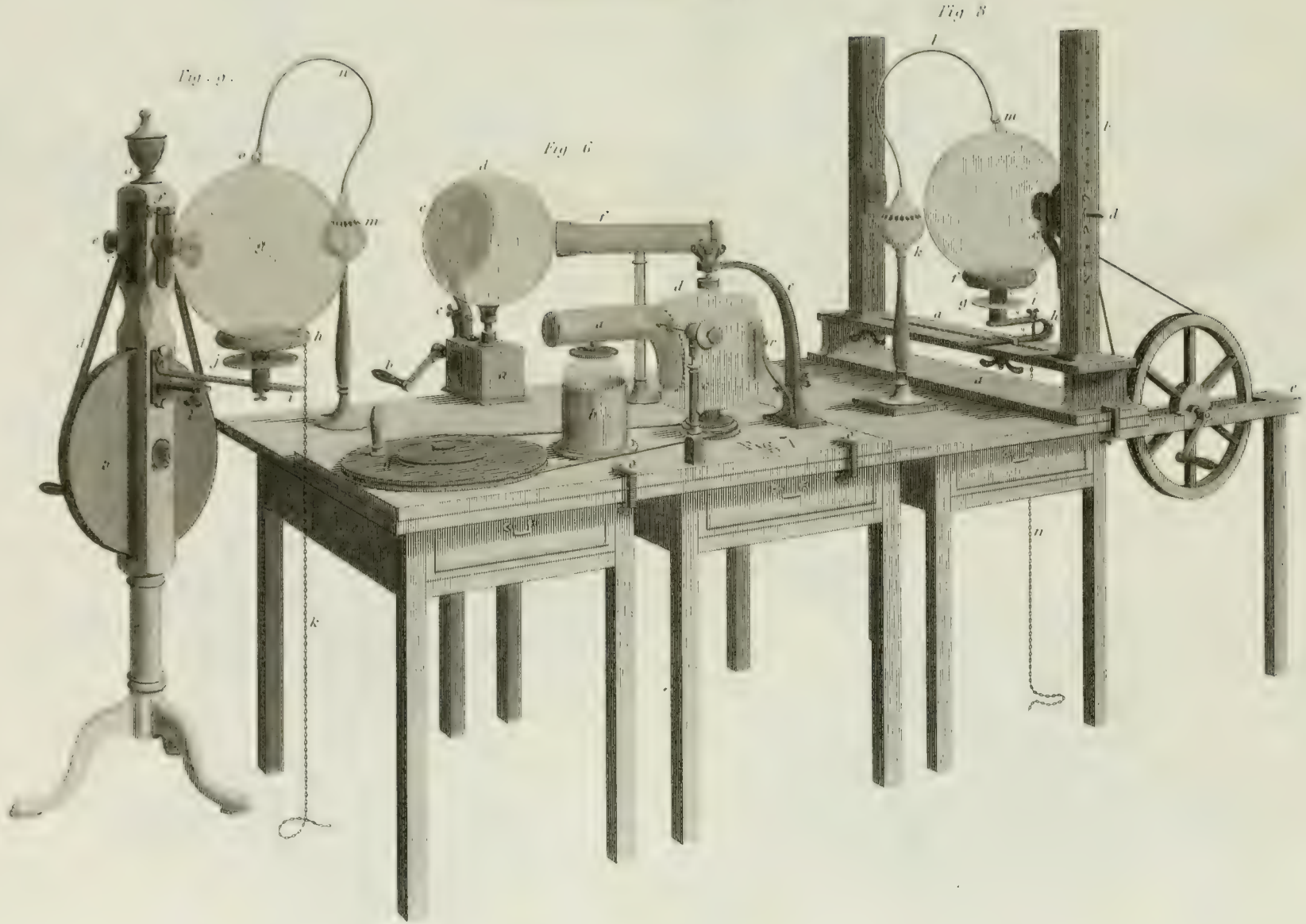
ELECTRIC MACHINES.



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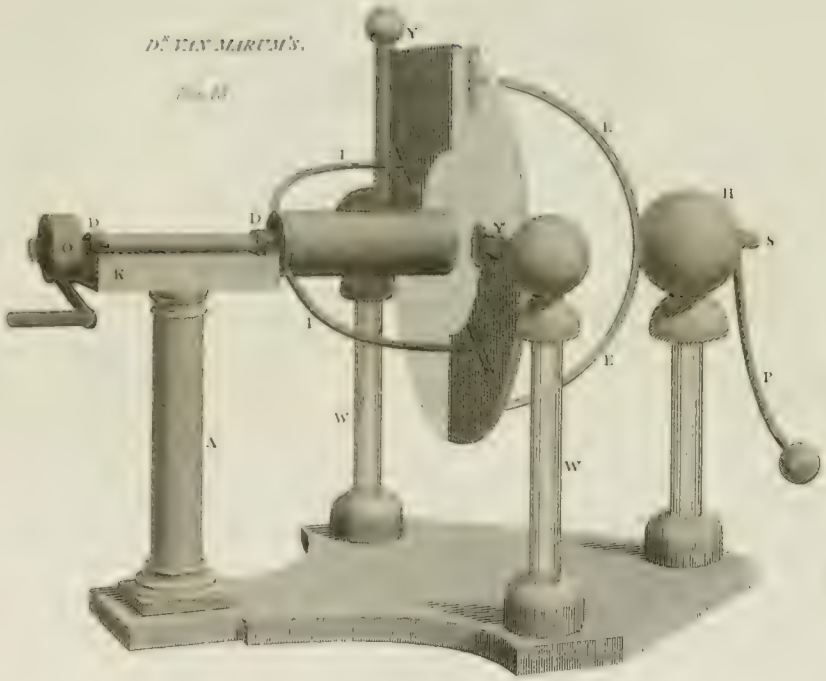
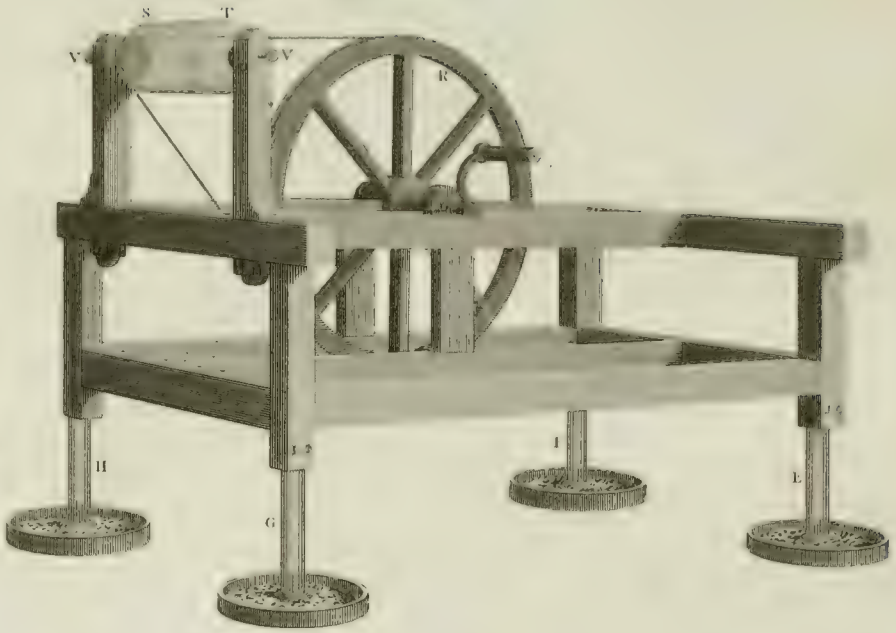
Dr. VAN MARUM's.

Fig. 10.



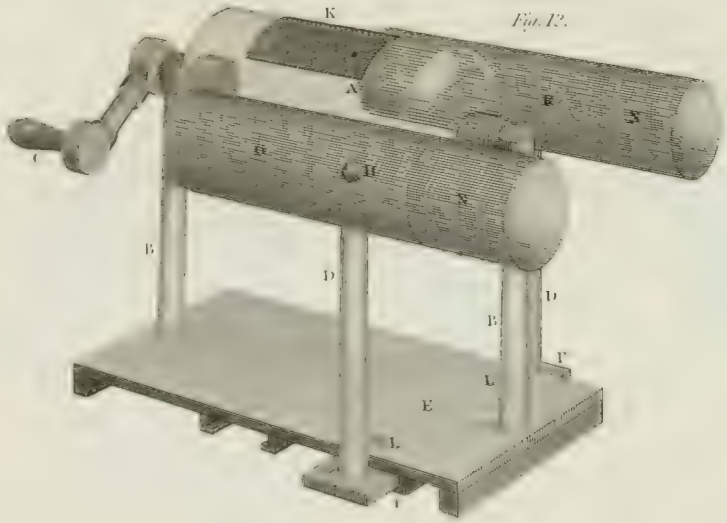
M. BECCARIA'S.

Fig. 13.



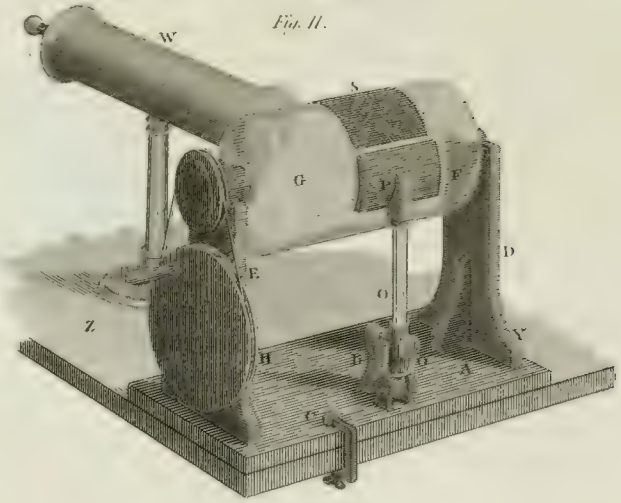
Mr. NAIRNE'S.

Fig. 12.

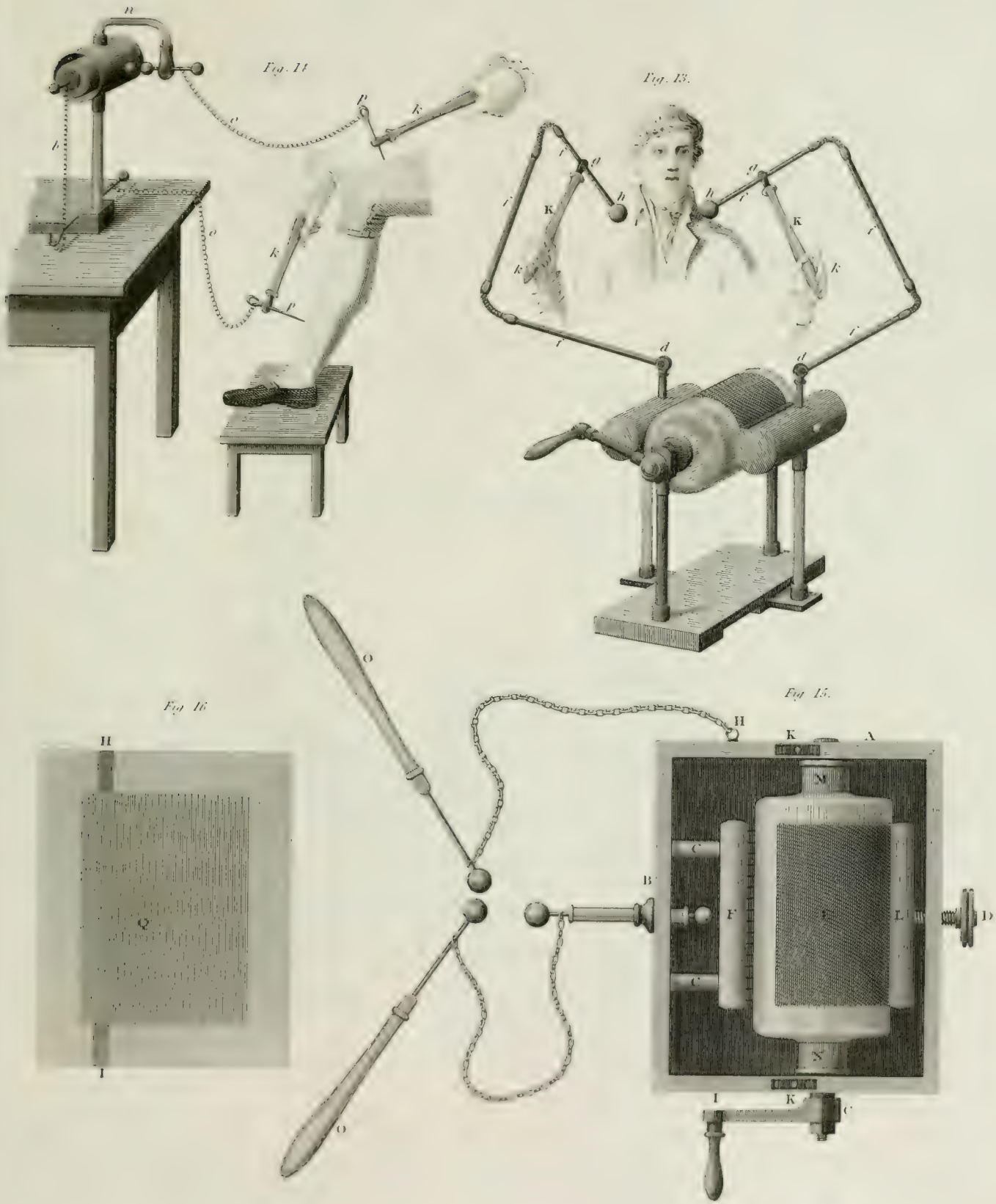


COMMON MACHINE.

Fig. 11.



Engraved by W. Lowry.



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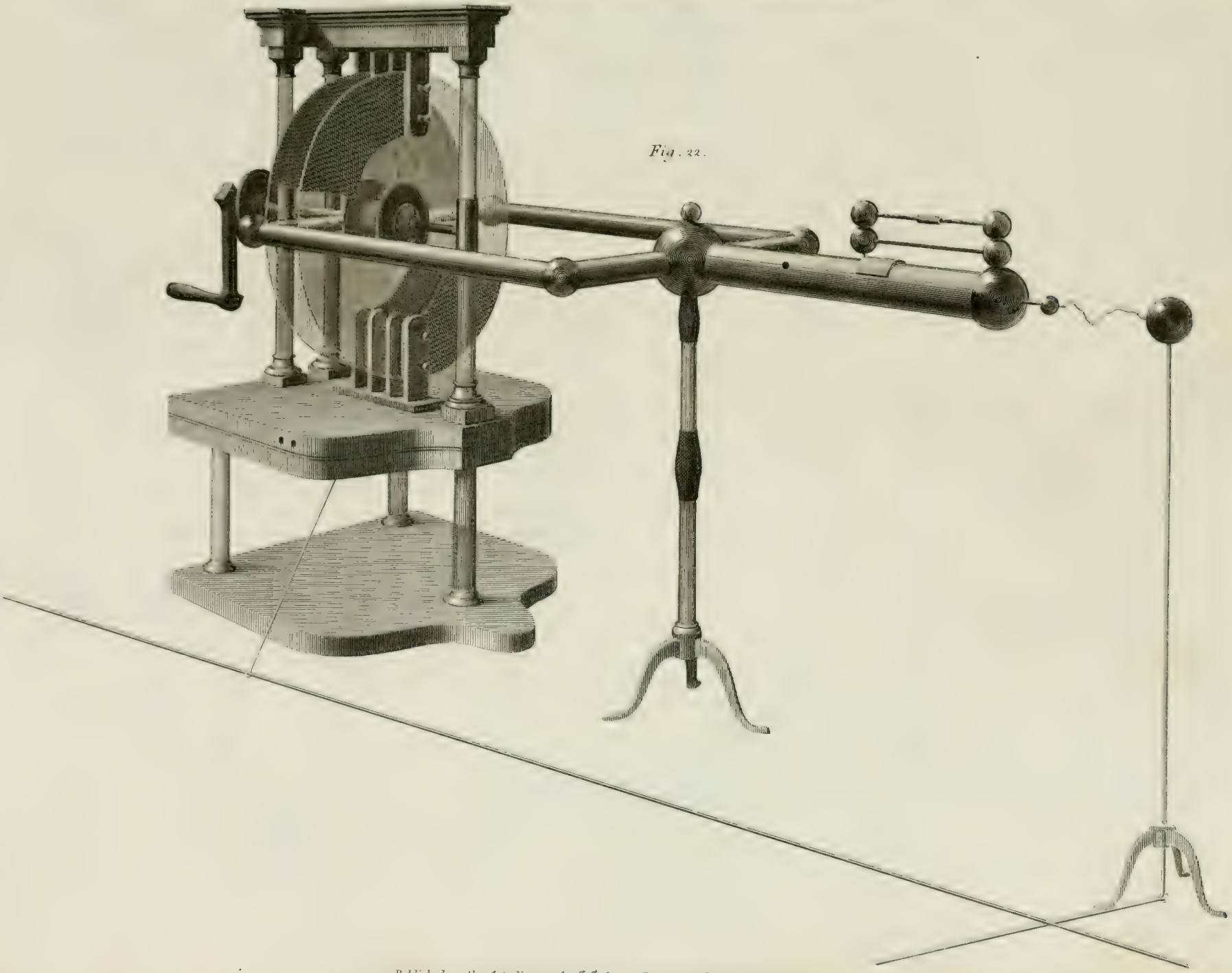
ELECTRICITY.

Mr. CUTHBERTSON'S ELECTRICAL MACHINE.



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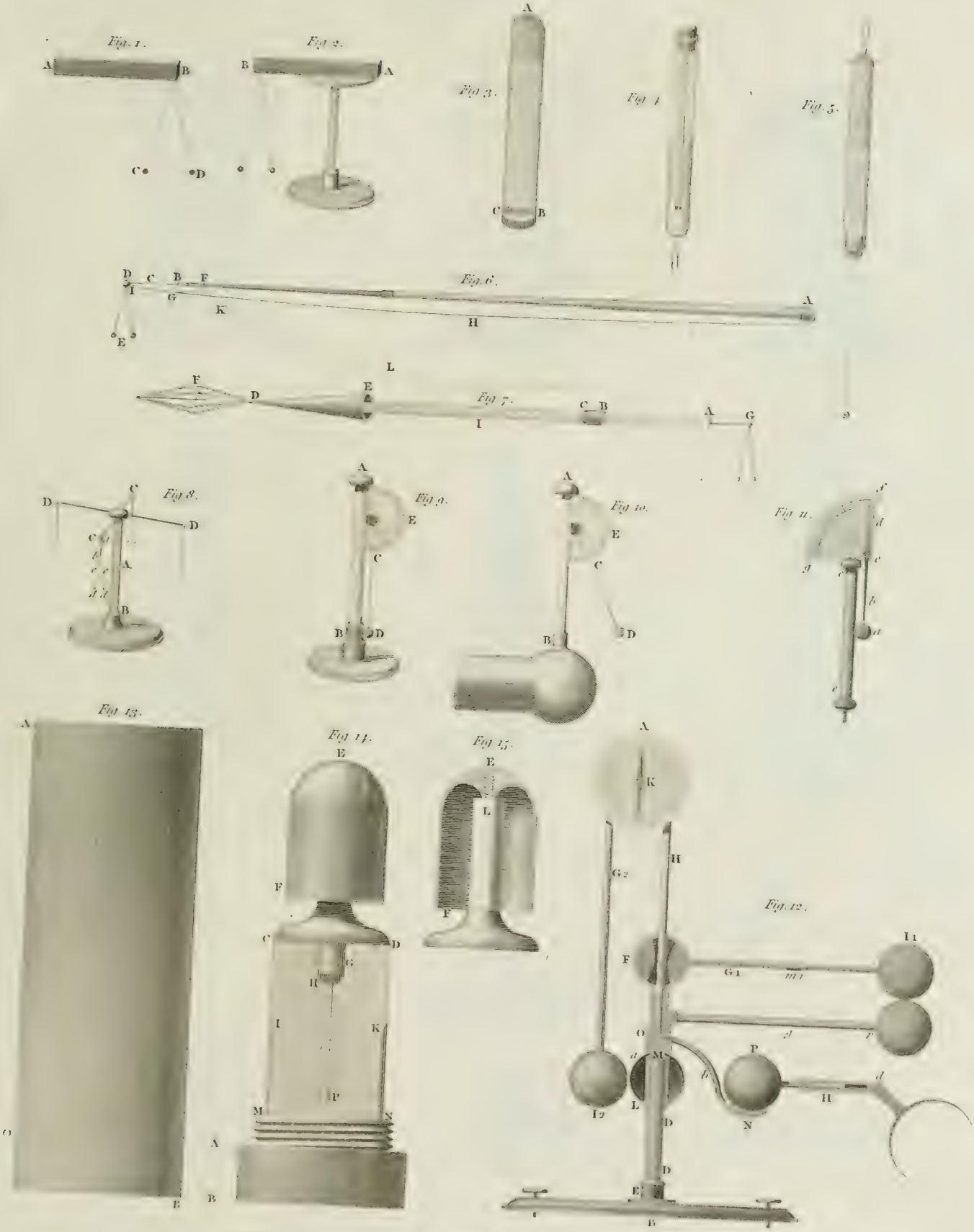
Engraved by Wilson Lowry.

ELECTRICITY.

ELECTROMETER.



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Engraved by W. Lowry.

ELECTRICITY.

ELECTROMETER.

For Figs. 13. 14. & 15. see Pl. XII.

Fig. 16.

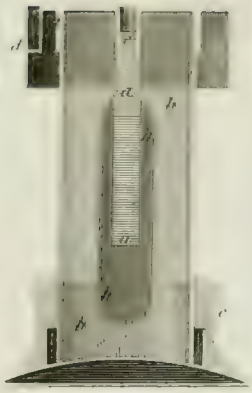
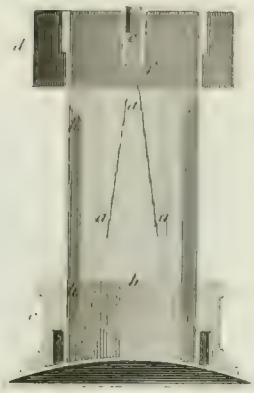


Fig. 17.



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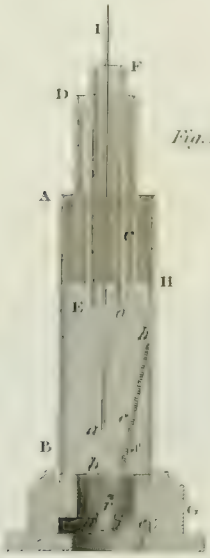

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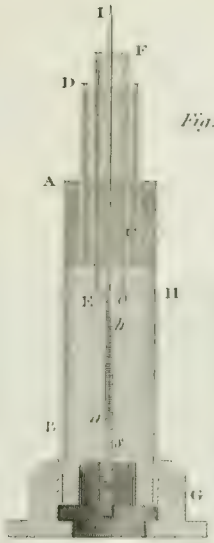

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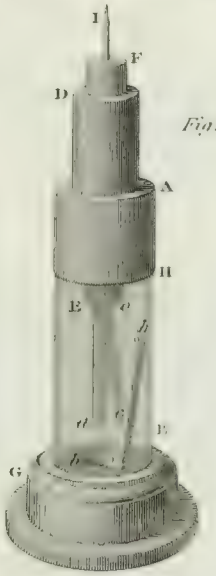


Fig. 21

Fig. 22.

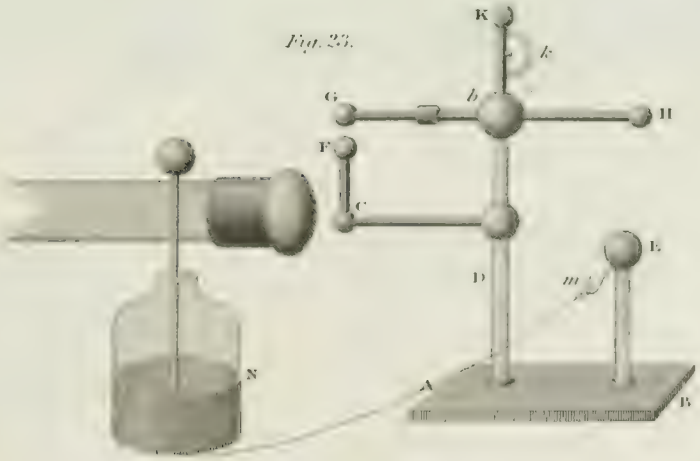


Fig. 23.

ELECTRICITY.

MEDICAL ELECTRICITY.

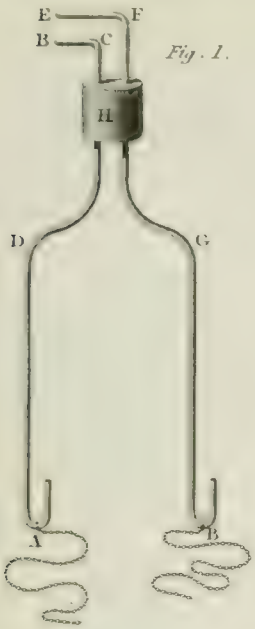


Fig. 1.

THUNDER House.

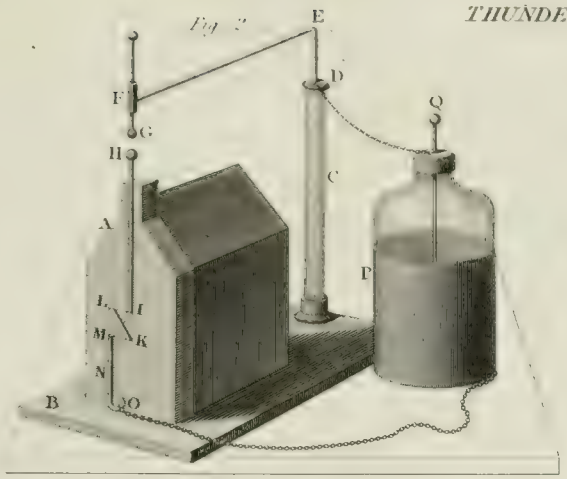


Fig. 2

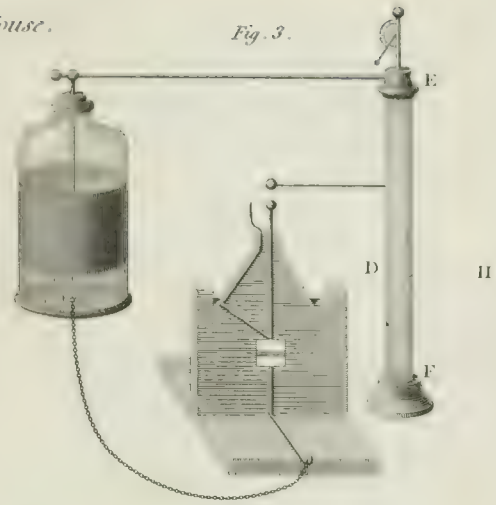


Fig. 3.

TORPEDO.

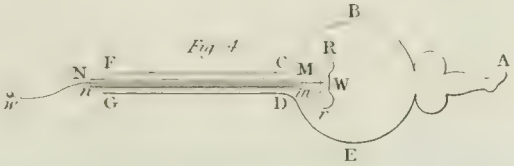


Fig. 4

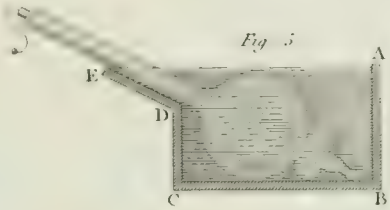


Fig. 5

BRUSH.

Fig. 6

Inside connecting Frame of Taylors BATTERY.

Fig 7 No 1

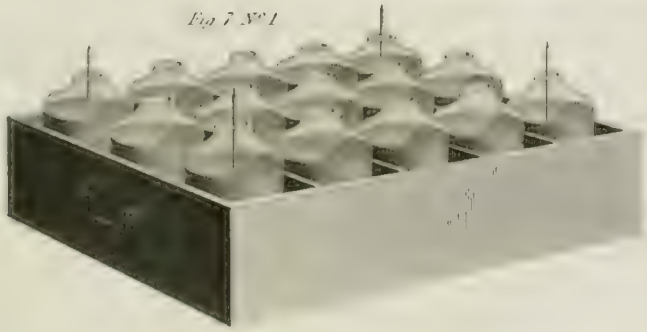
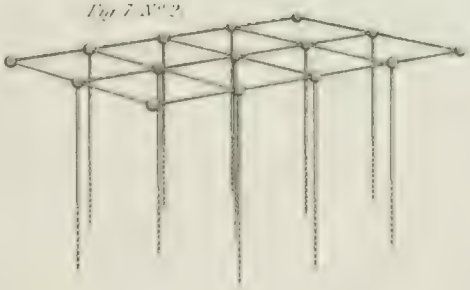


Fig 7 No 2



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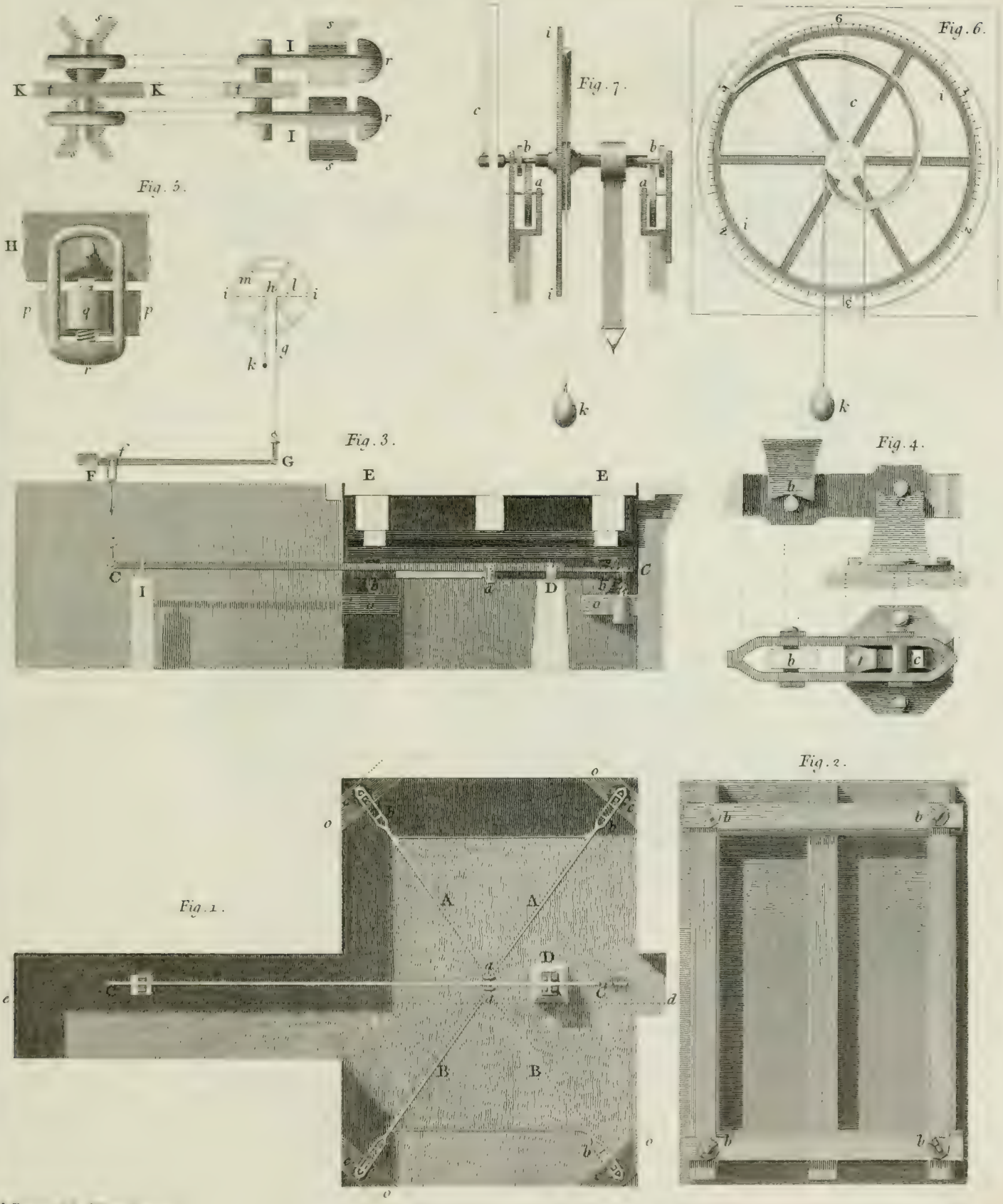
ENGINE.

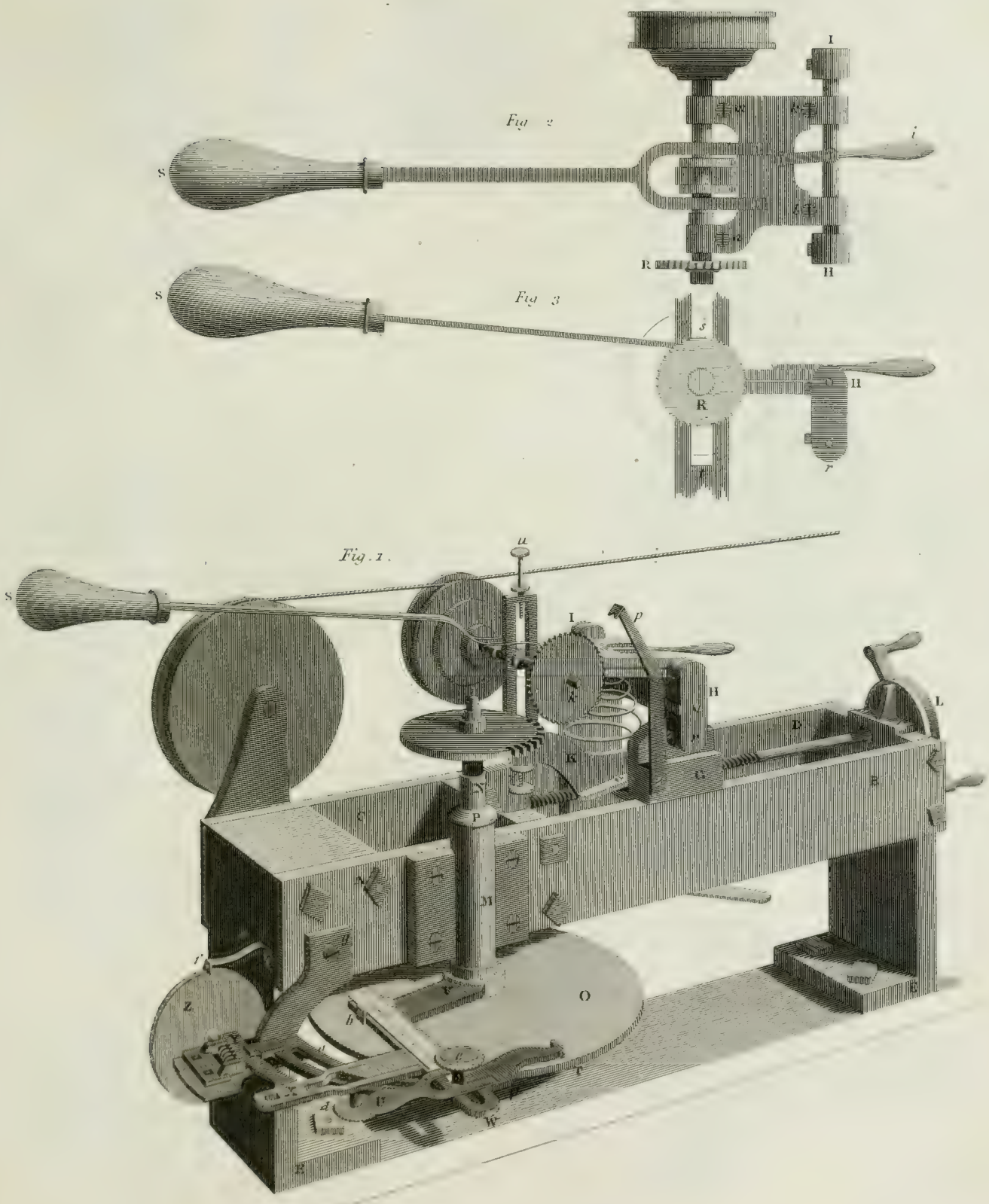
Mr. R. SALMON'S WEIGHING MACHINE.



Drawn & Engraved by Wilson Lowry.

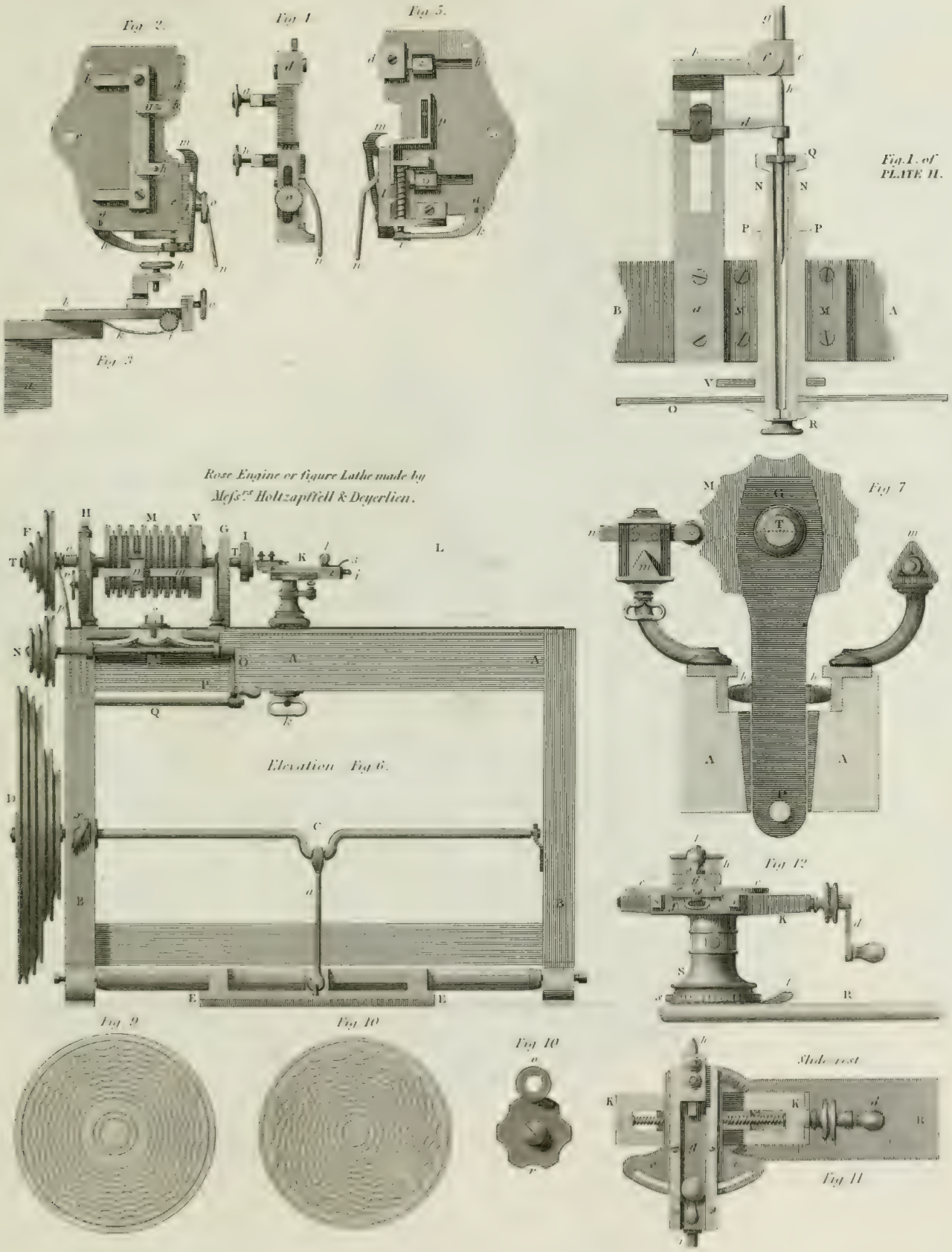
Published as the Act directs, Jan.y 1, 1803, by Longman & Rees, Paternoster Row.

Cutting Engine by Hindley.



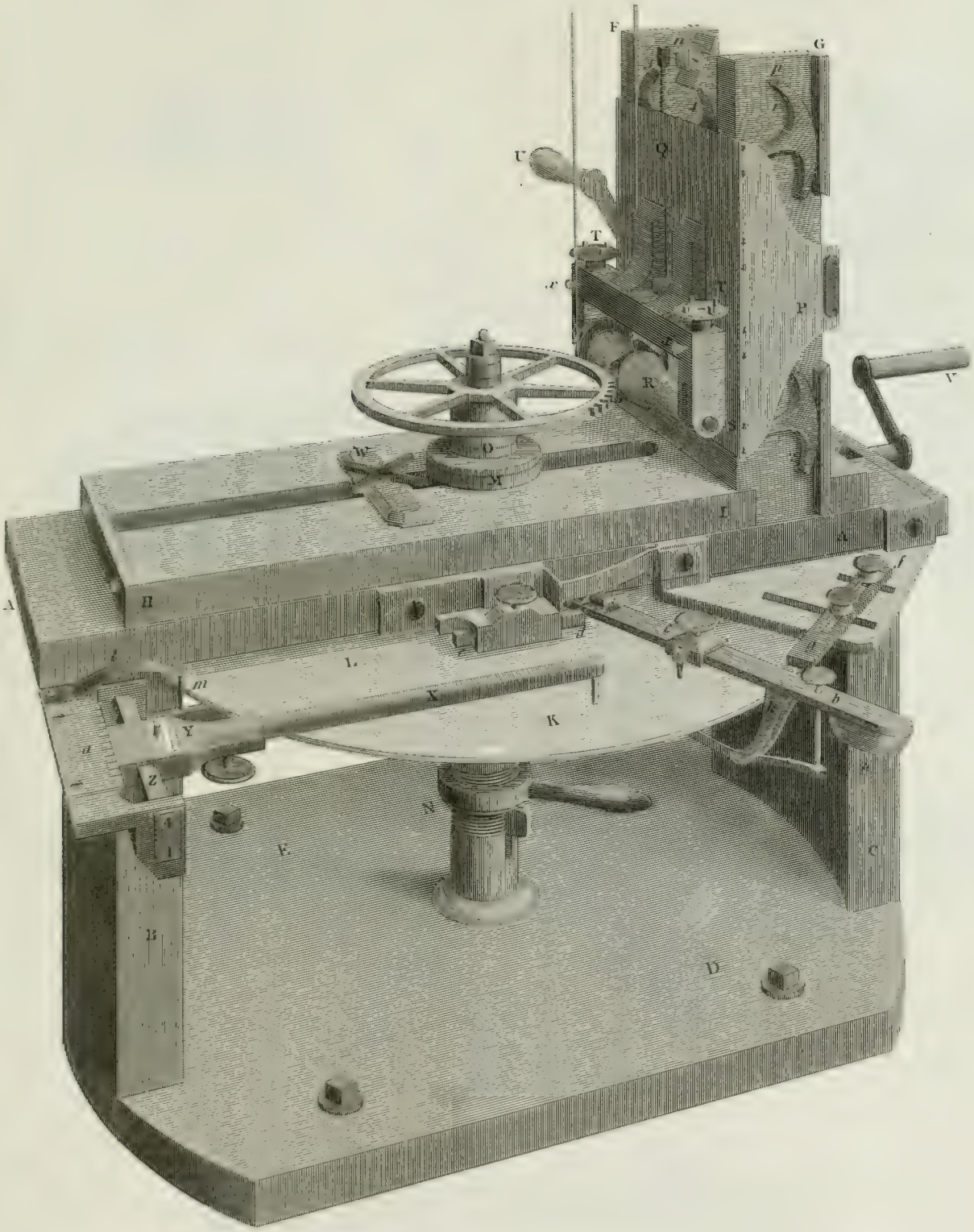
J. Farey Junr delin. Published as the Act directs, 1813, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row Engraved by W. Lowry.

CUTTING ENGINE.



J. Farey Junr. del. Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme & Brown, London

Cutting ENGINE by Rehe.



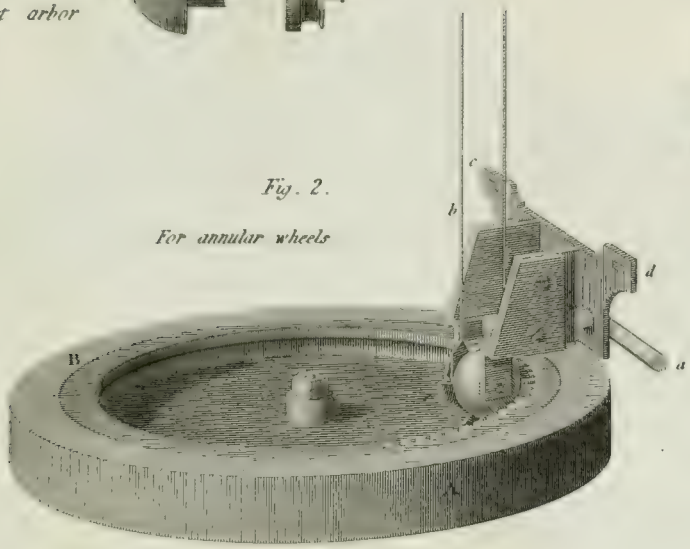
CUTTING ENGINE by REHE.

Fig. 3

Short arbor

Fig. 2.

For annular wheels



For worm wheels

Fig. 1.

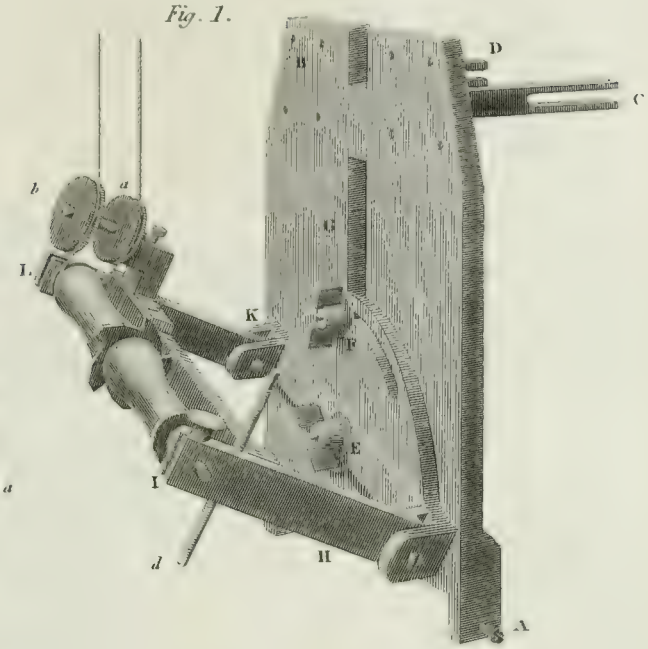


Fig. 4.

For Racks

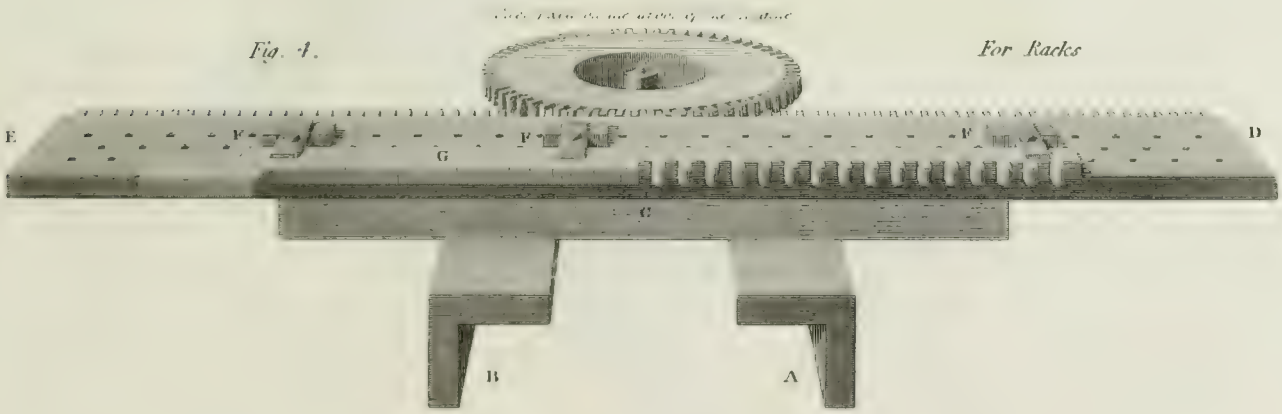
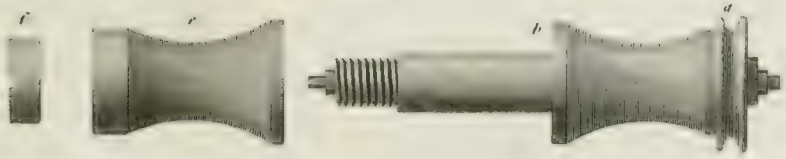


Fig. 5.



Cutter arbor

Published as the Act directs, 1818 by Longman, Hurst, Rees Orme & Brown Paternoster Row.

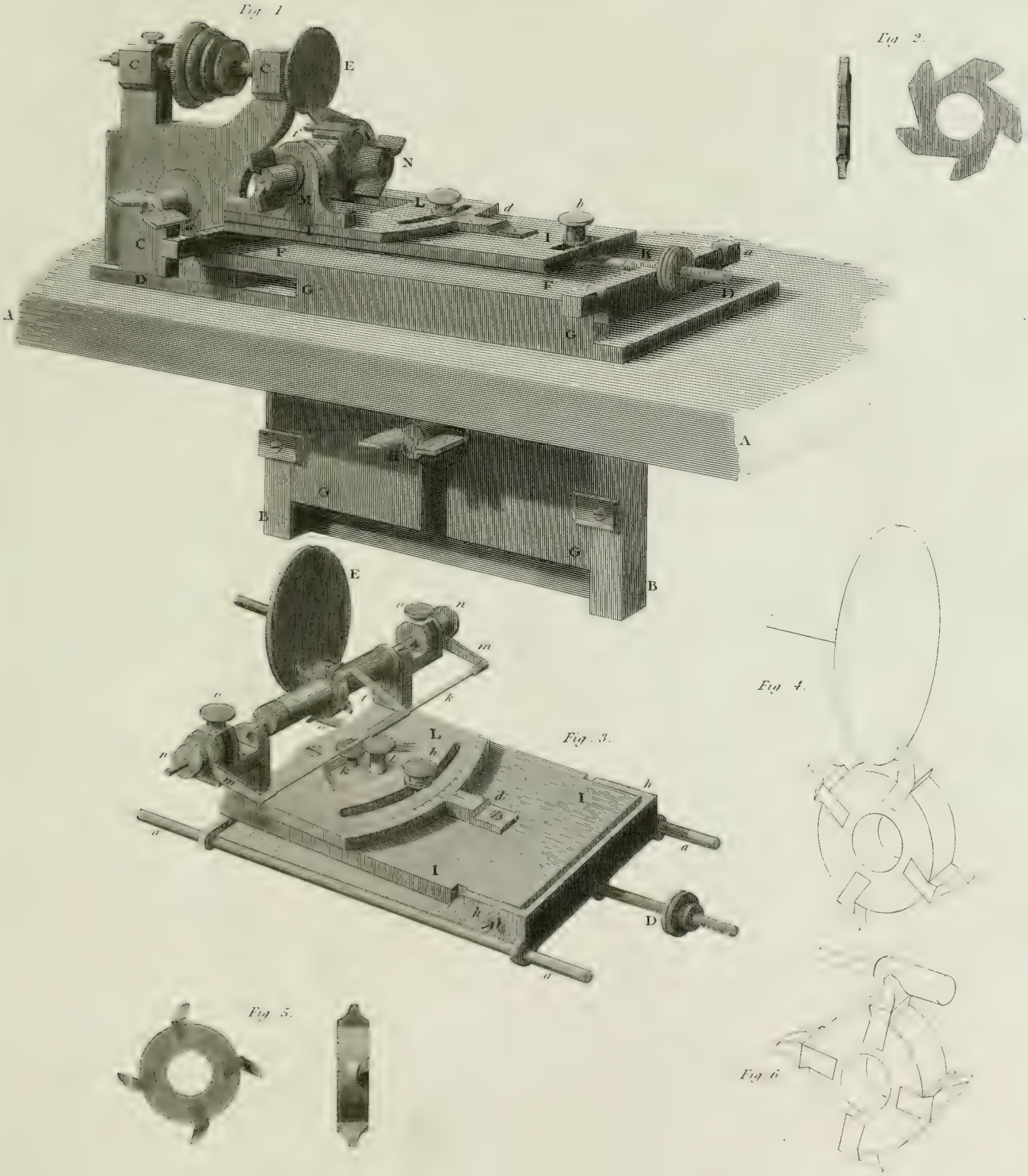
Lowry Sculp

ENGINES.

For sharpening Cutters

BY REHE

PLATE VI.

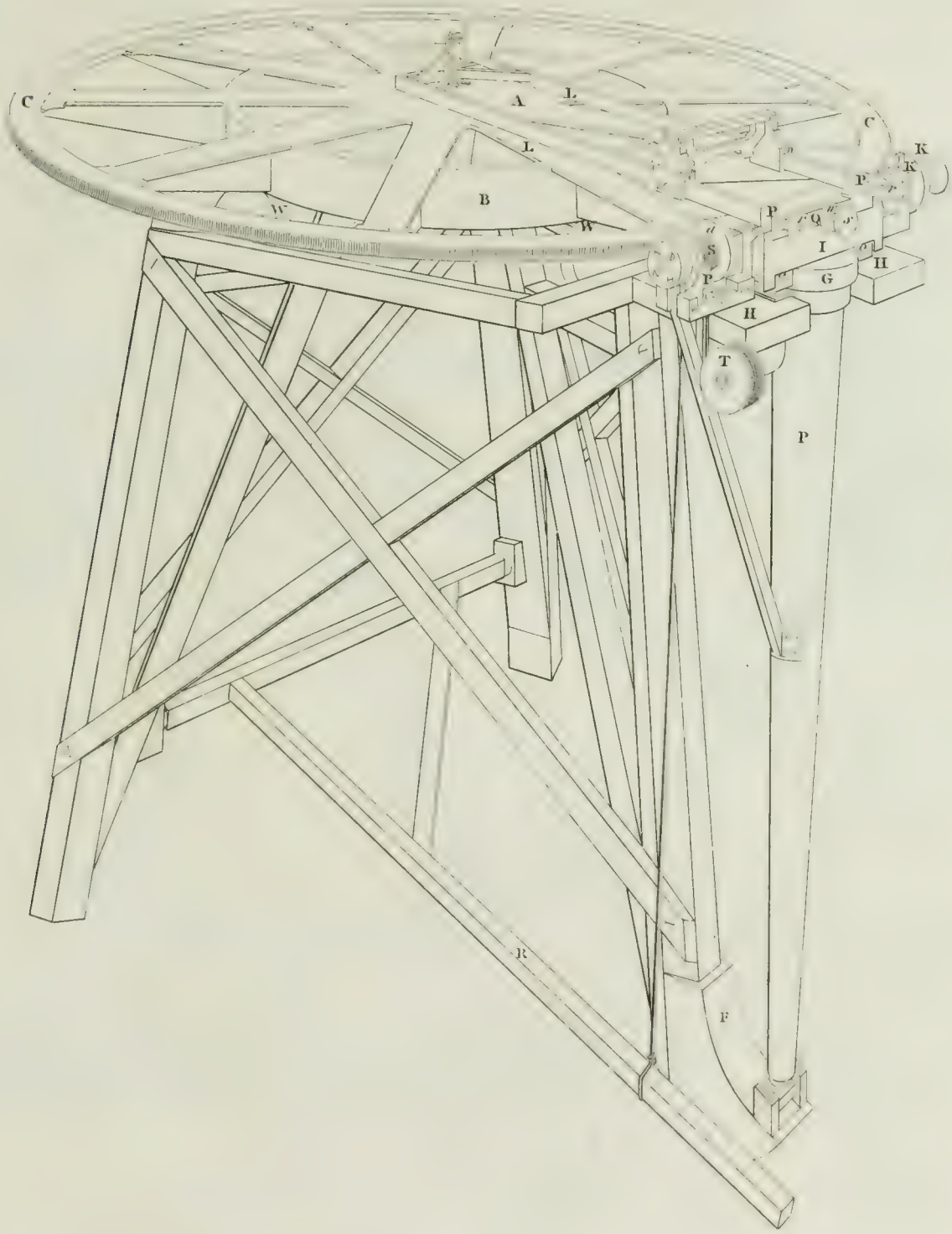


J. Farey, Junr del.

Published as the Act directs 1818 by Longman Hurst Rees Orme & Brown Paternoster Row

Lowry Sc.

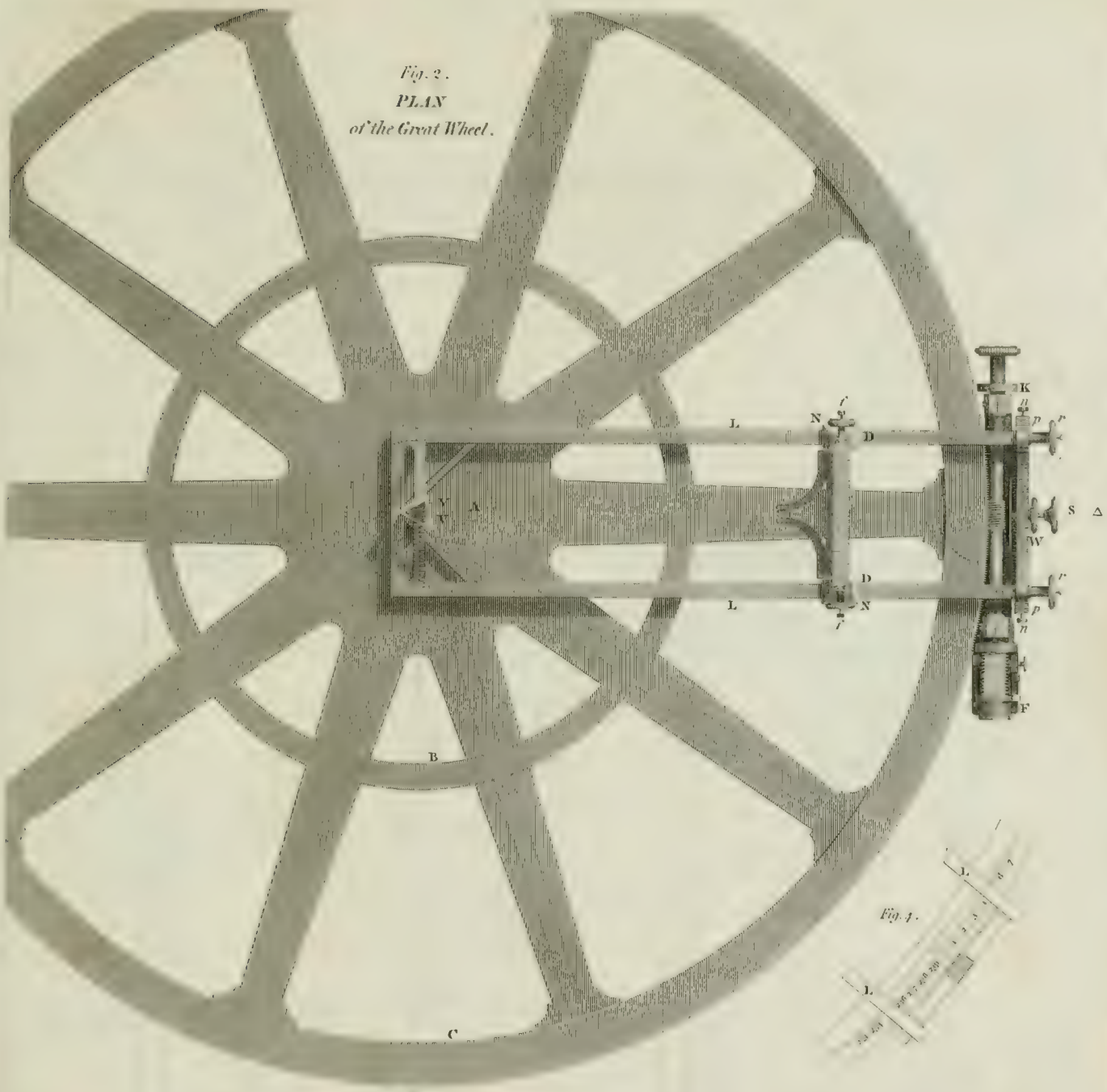
A perspective View of Mr. RAMSDEN'S dividing Engine.

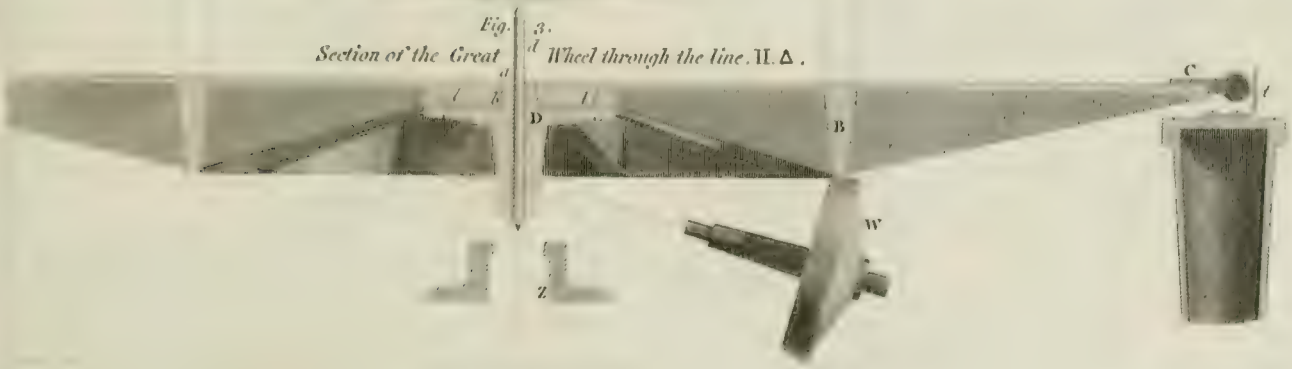


Published as the Act directs, 1810 by Longman, Hurst, Rees and Orme, Paternoster Row.

Engraved by Wilson Lowry.

Mr. RAMSDEN'S DIVIDING ENGINE.

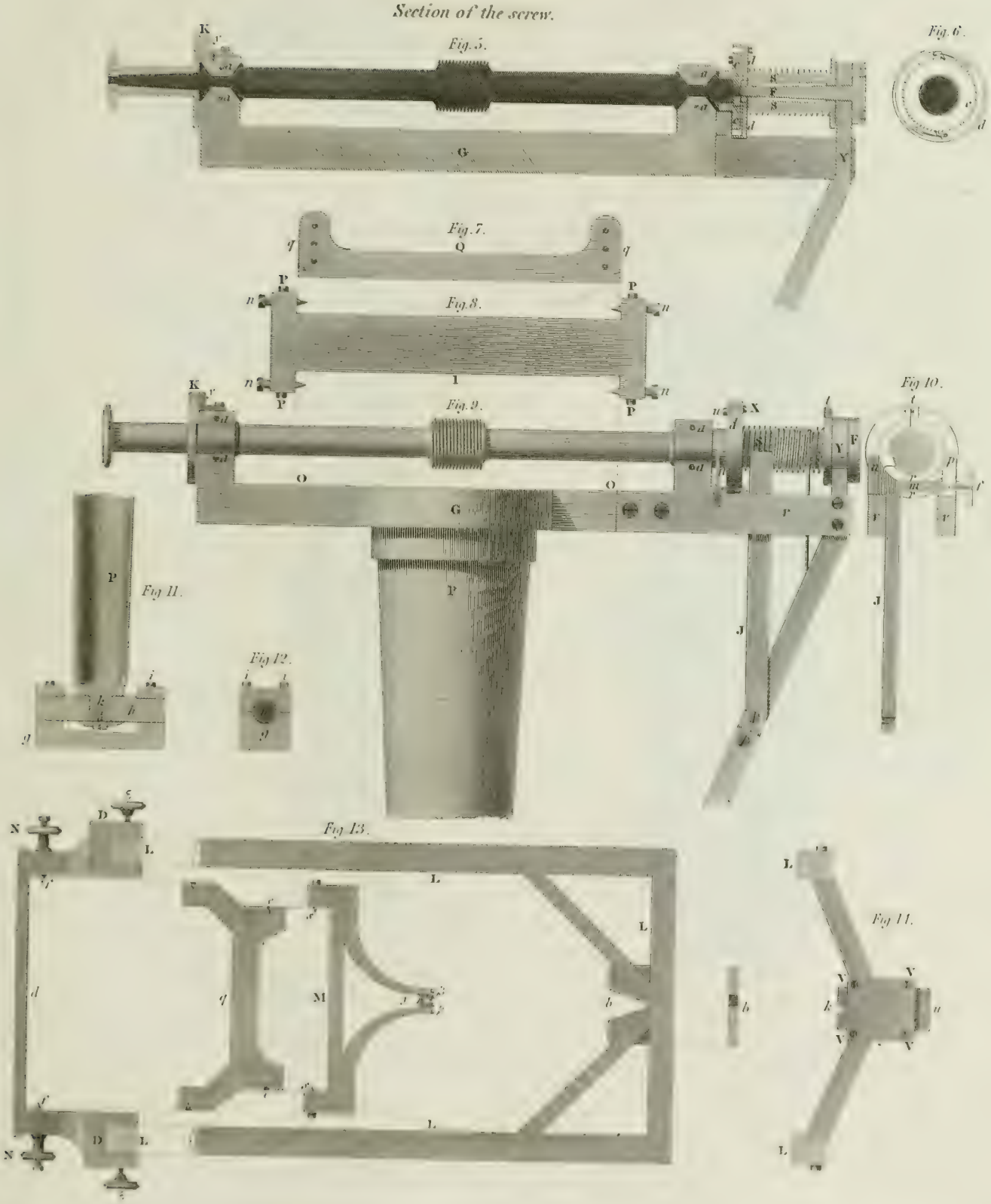




Published as the Act directs, 1810, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Mr. RAMSDENS DIVIDING ENGINE.

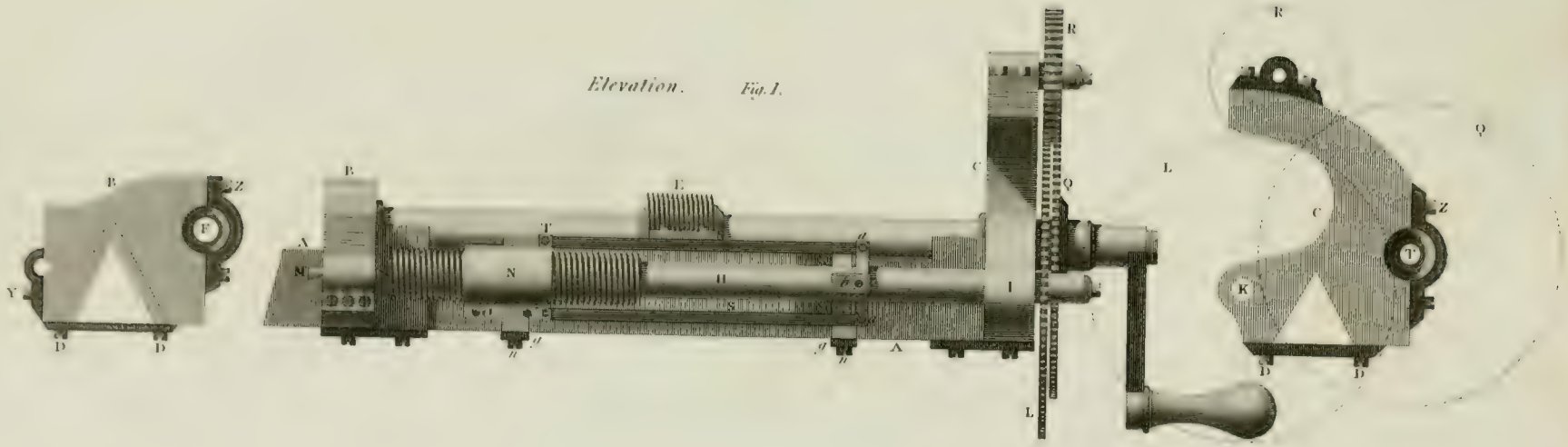


Published as the Act directs 1809, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Engine for cutting the Screw of Ramsden's Circular Dividing Engine.

Elevation. *Fig. 1.*



Plan. *Fig. 2.*

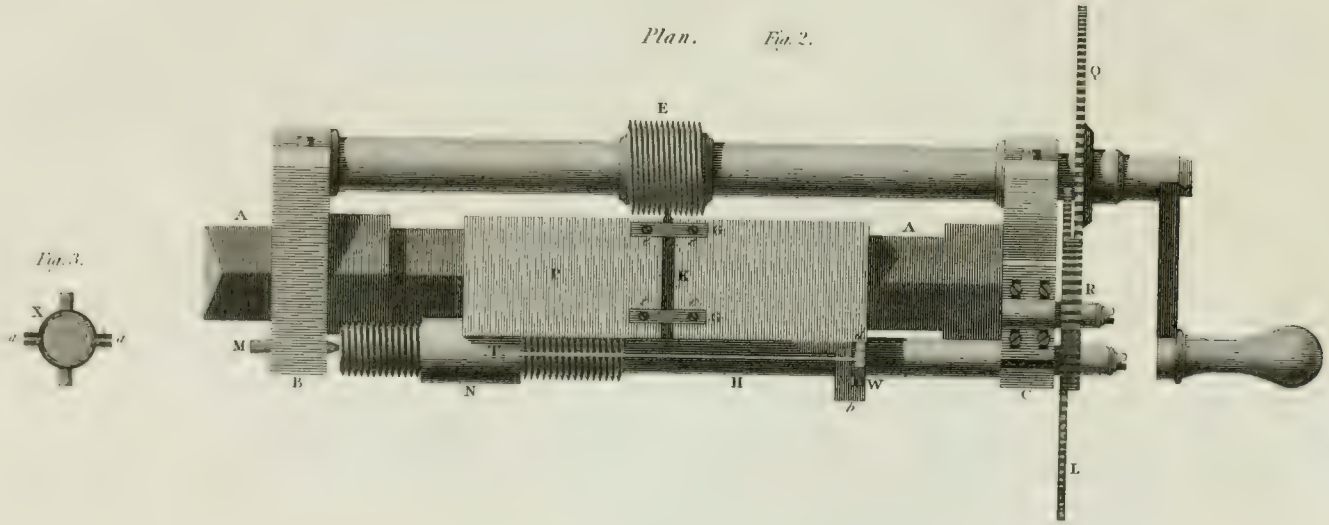


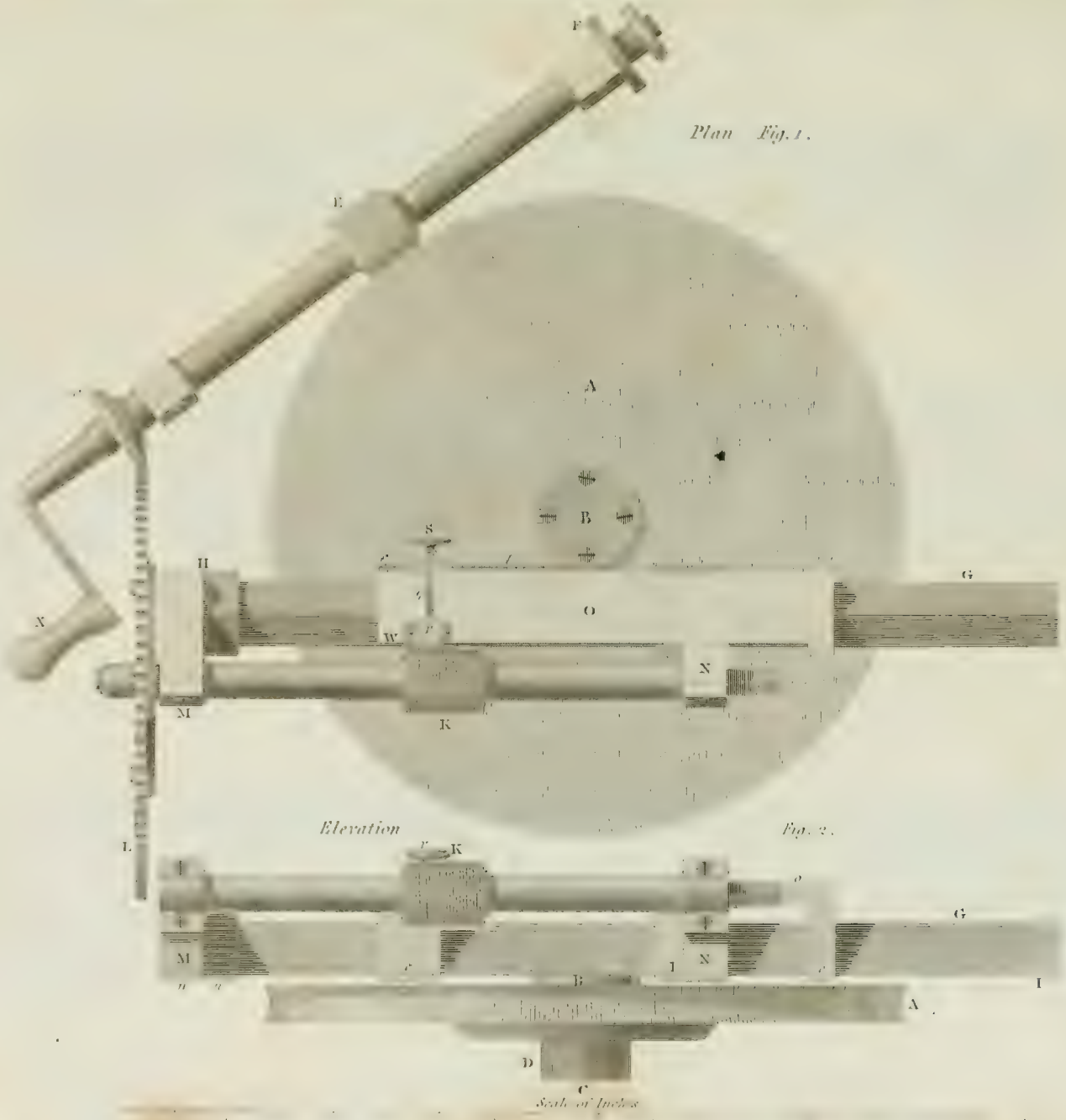
Fig. 3.

Drawn by J. Farey

Published as the Act directs 1812, by Longman, Hurst, Rees, Orme and Brown, Paternoster Row London

Engraved by W. Lowry.

ENGINE for cutting the Screw of RAMSDENS Straight Line dividing Engine.



Drawn by J. Farey. Published as the Act directs, 18th, by Longman, Hurst, Rees, Orme & Brown. Wilson Lewis

Ramsden's Engine for dividing straight Lines.

Fig. 3.

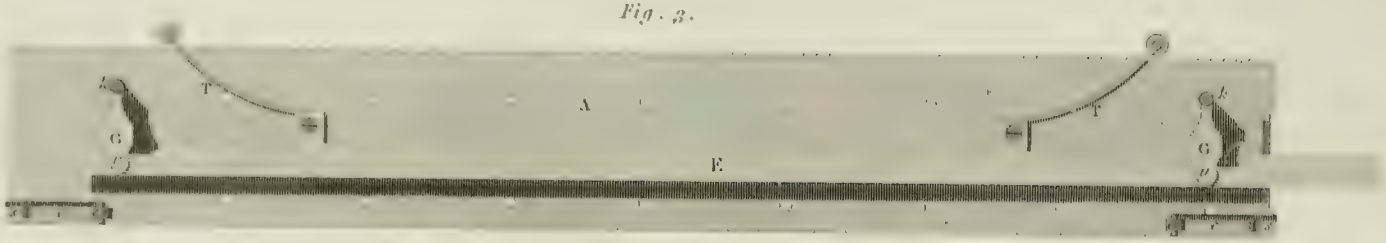


Fig. 1.

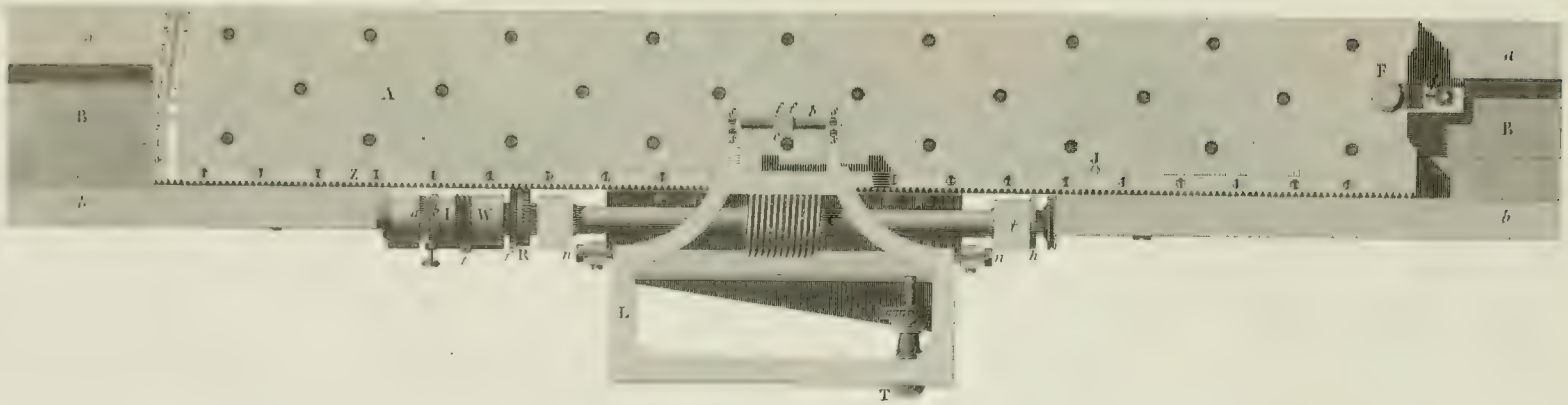
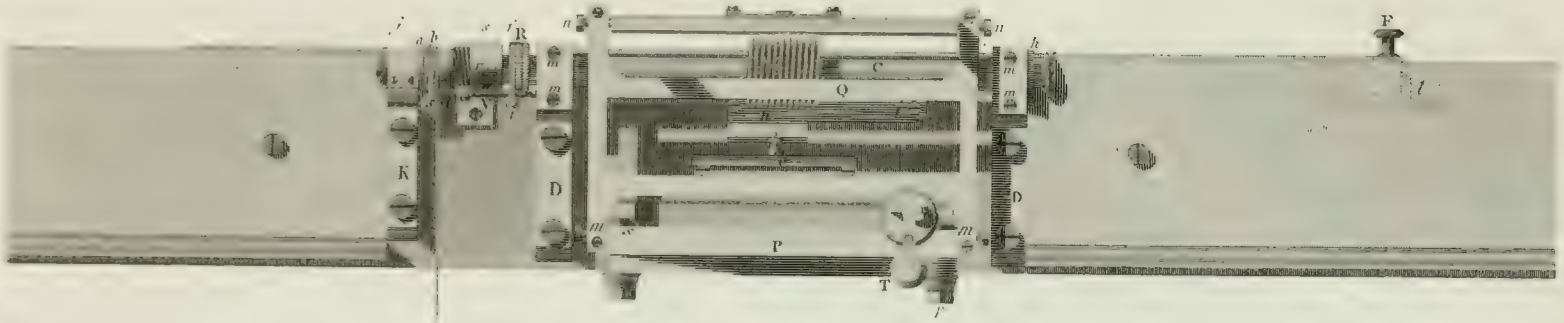


Fig. 2.

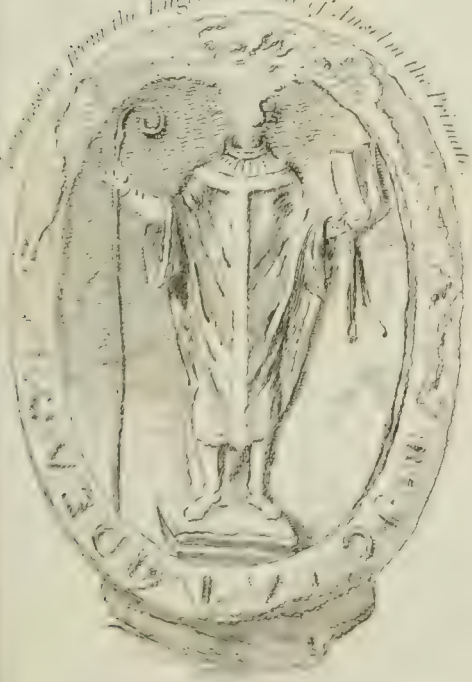


J. Farey Jun. del. Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by Wilson Lowry.

Engraved front of King Alfred's Jewel.

Fig. 1.

Engraving on the back of King Alfred's Jewel.



Engraved from the Engraved Seal of Anselm the Primate.

Fig. 3.

Engraved Brass on the Tomb of Wm. de Fulbourn, in Fulbourn Church, Cambridgeshire.

Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

HORSE SHOEING.

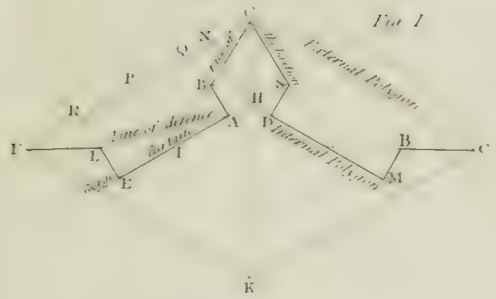
Published as the Act directs, 1810, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

PLATE I.

BASTION.

Fig. 1



CAVALIER.

Fig. 2.

Fig. 3

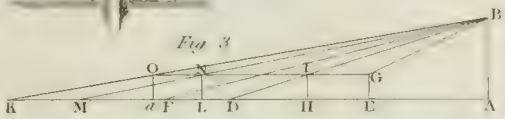
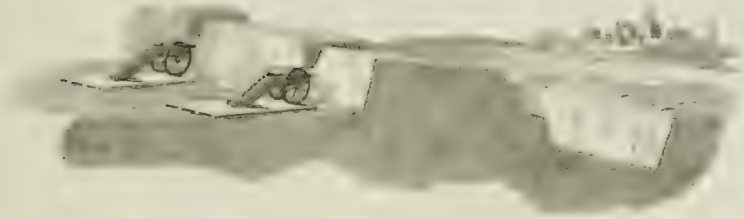


PLATE II.

Fig. 1.



BATTERY.

Battery en Barbe or Barbet.

Fig. 3

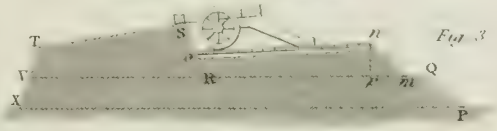


Fig. 2

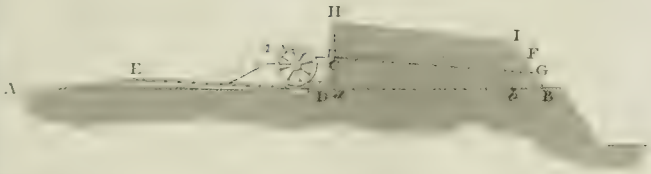


Fig. 8

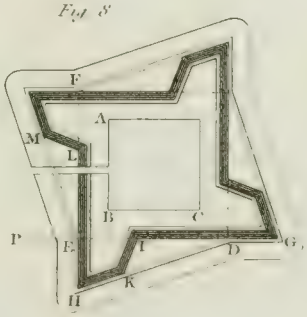


PLATE IV.

FORT.

Fig. 4

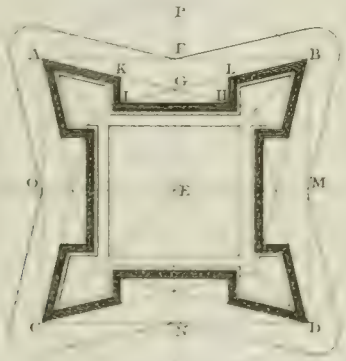


Fig. 6

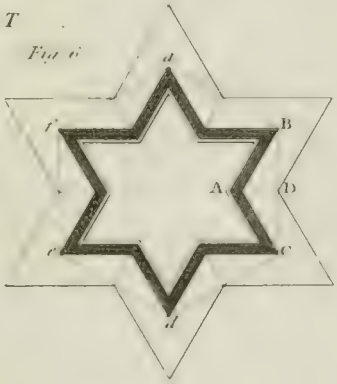


Fig. 9

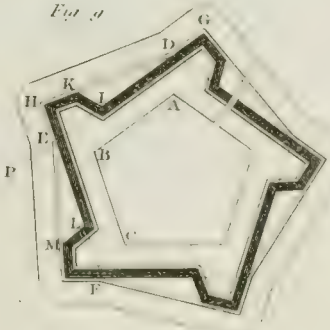


Fig. 5

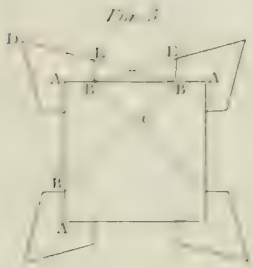


Fig. 7

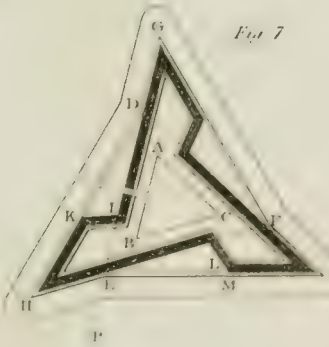
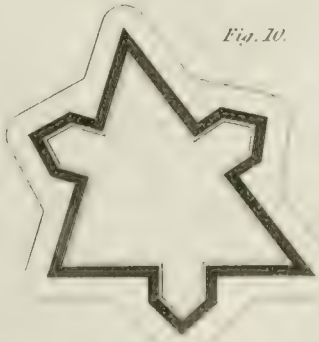


Fig. 10.



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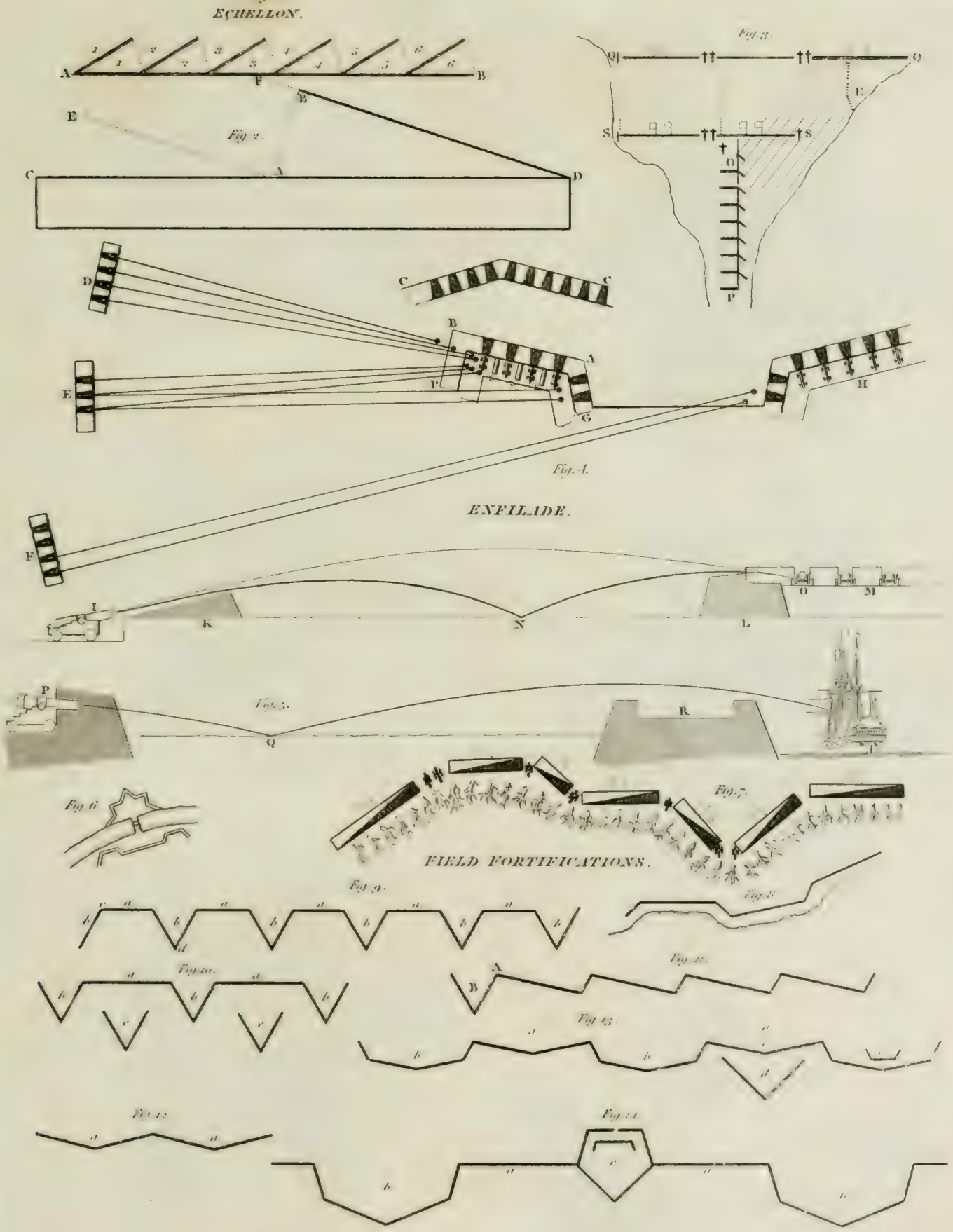
Lowry S.



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FORTIFICATION.

CONSTRUCTION.

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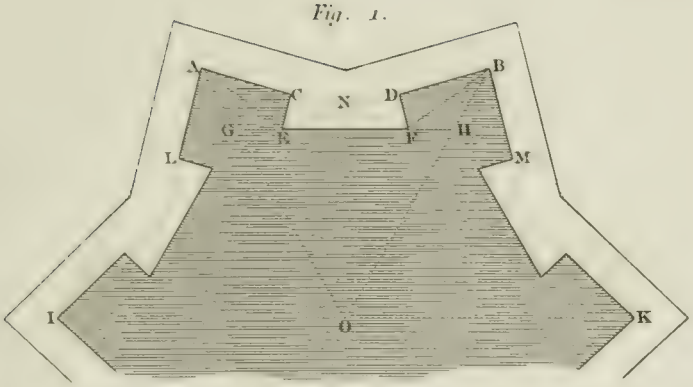

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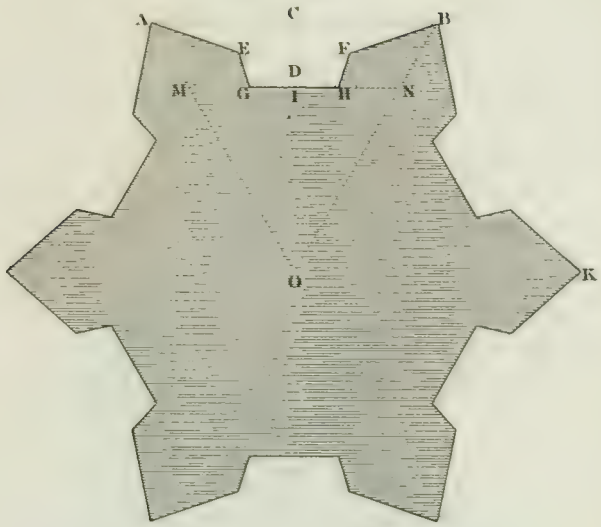

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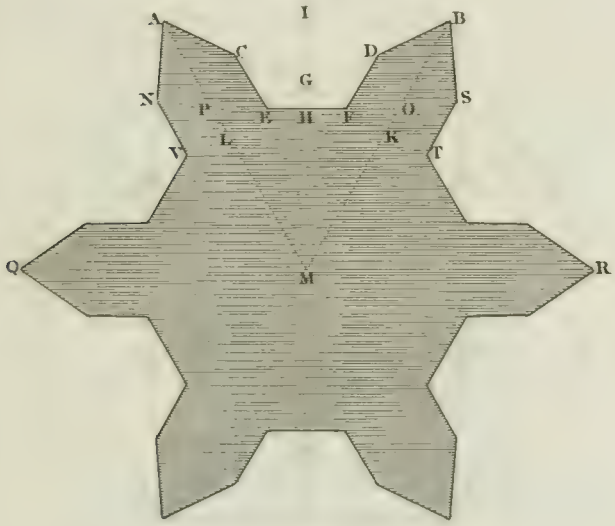

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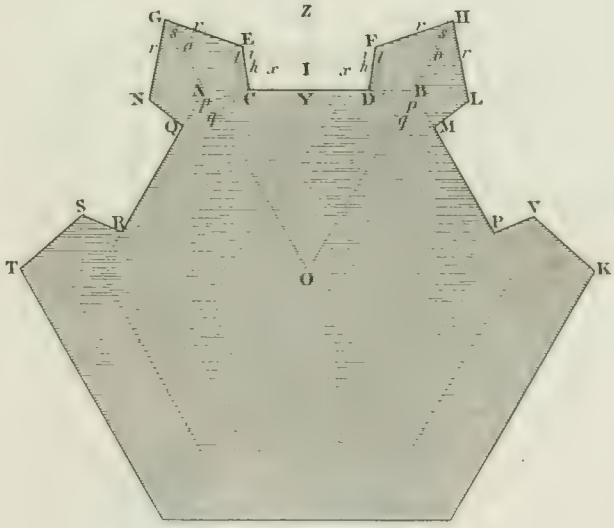

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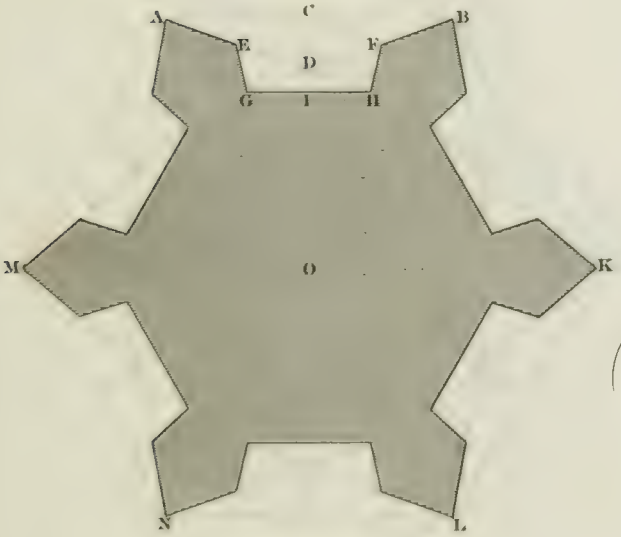

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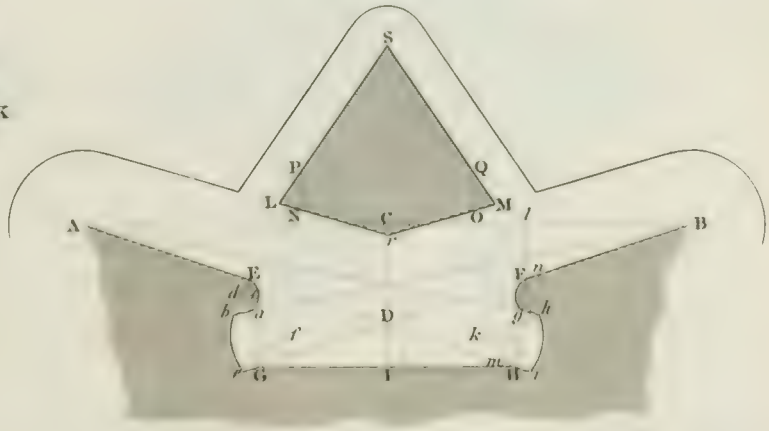

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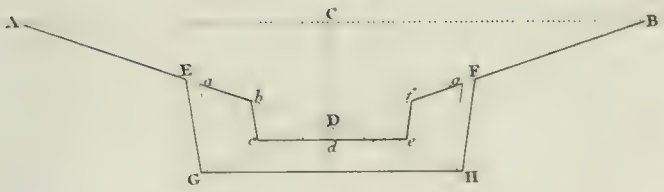
CONSTRUCTION.

Fig. 7.



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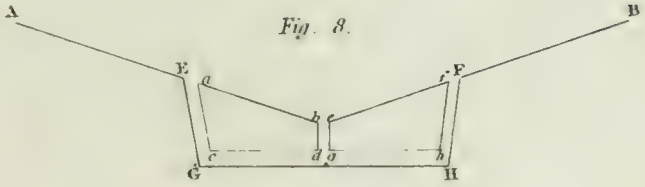

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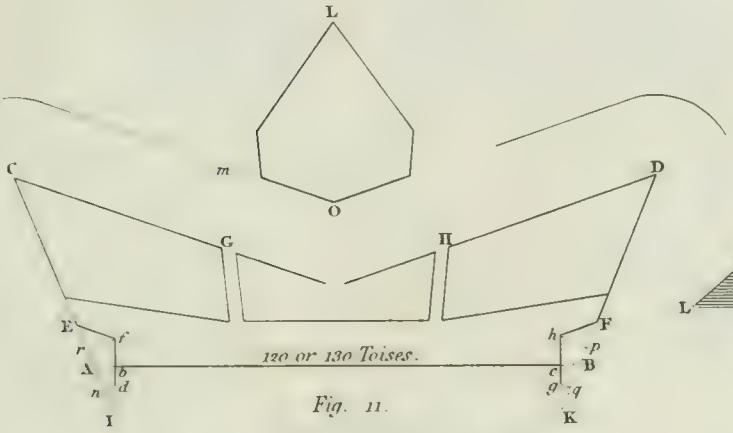

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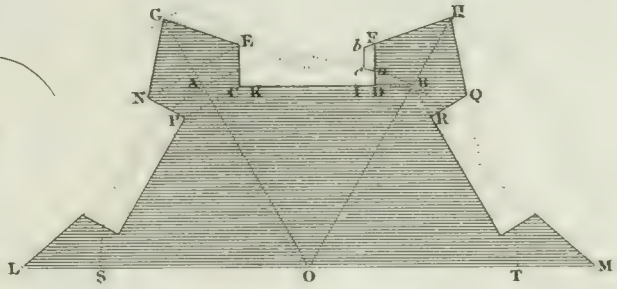

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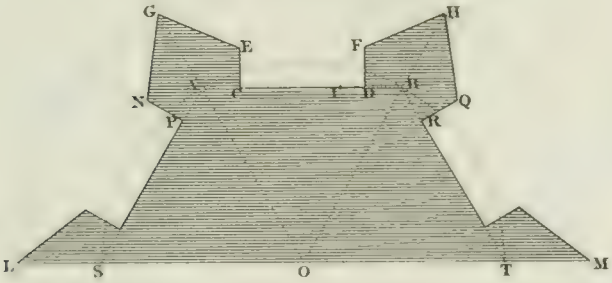

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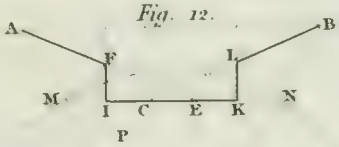

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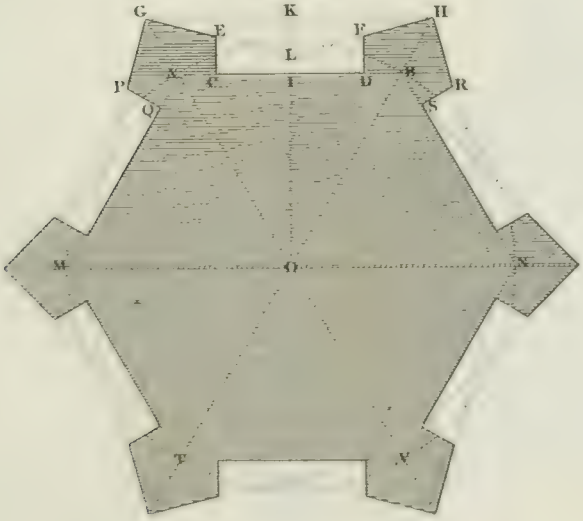
Fig. 13.



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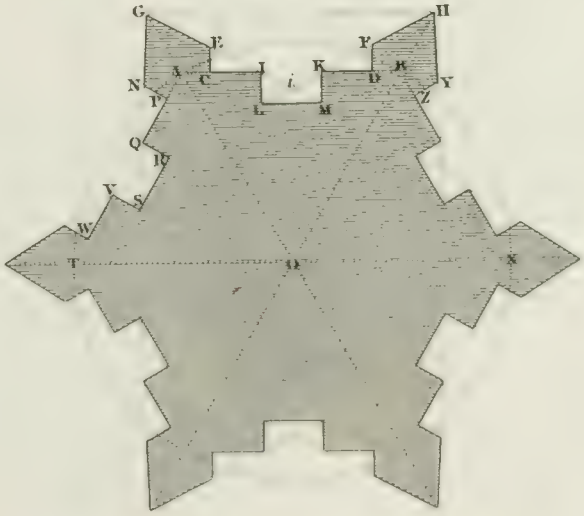

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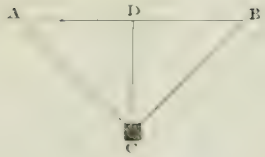
MANTELET

Fig. 9

MINE

Fig. 10.



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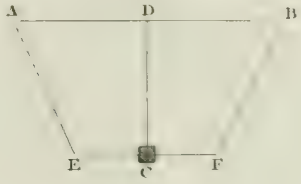
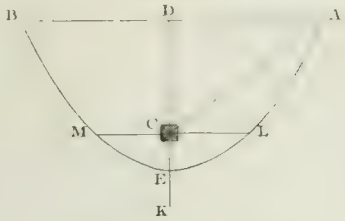


Fig. 12



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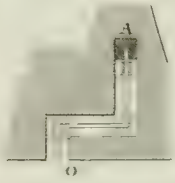

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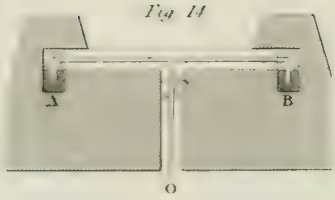


Fig. 15

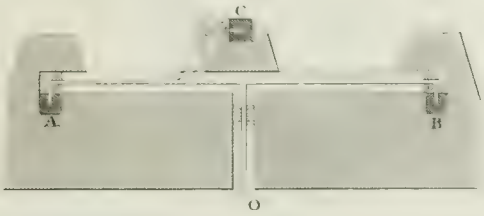
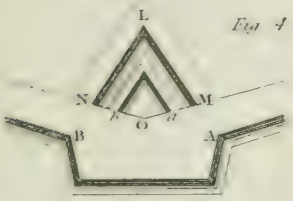


PLATE VII.

RAVELIN

Fig. 4



TENAILLE

Fig. 7.

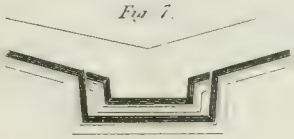
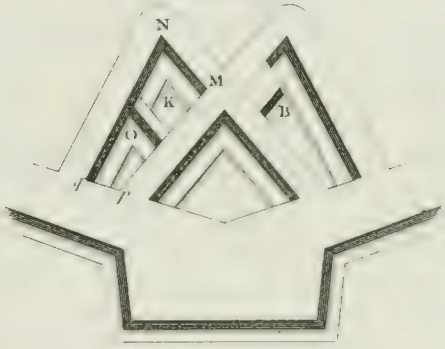


Fig. 6

TENAILLON

Fig. 9



REDOUBT

Fig. 5

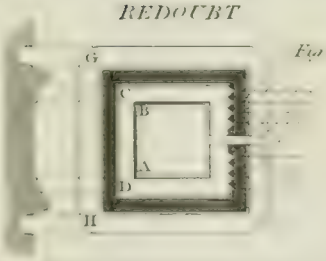
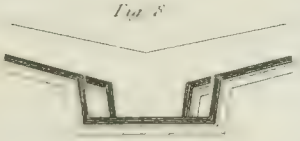


Fig. 8

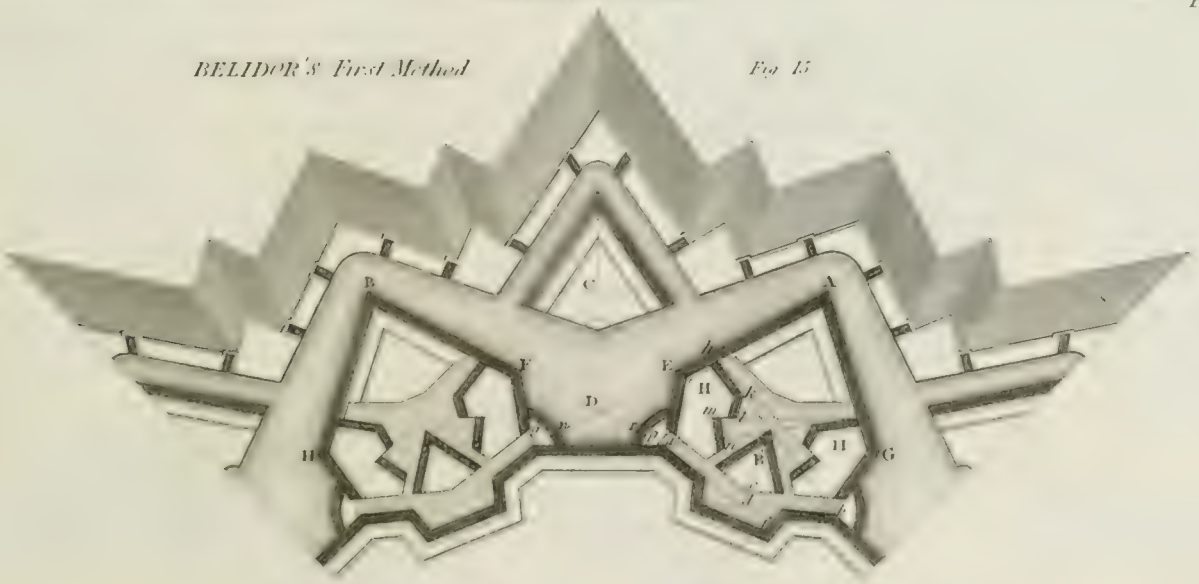


FORTIFICATION.

PLATE VIII.

BELIDOR'S First Method

Fig. 13



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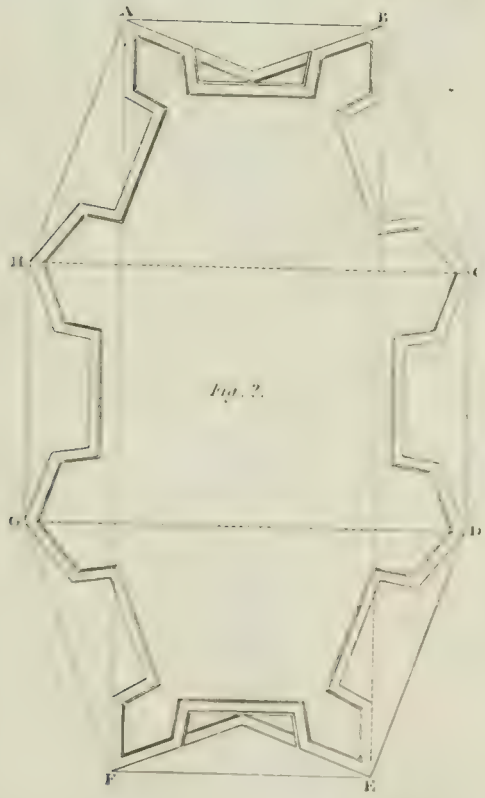
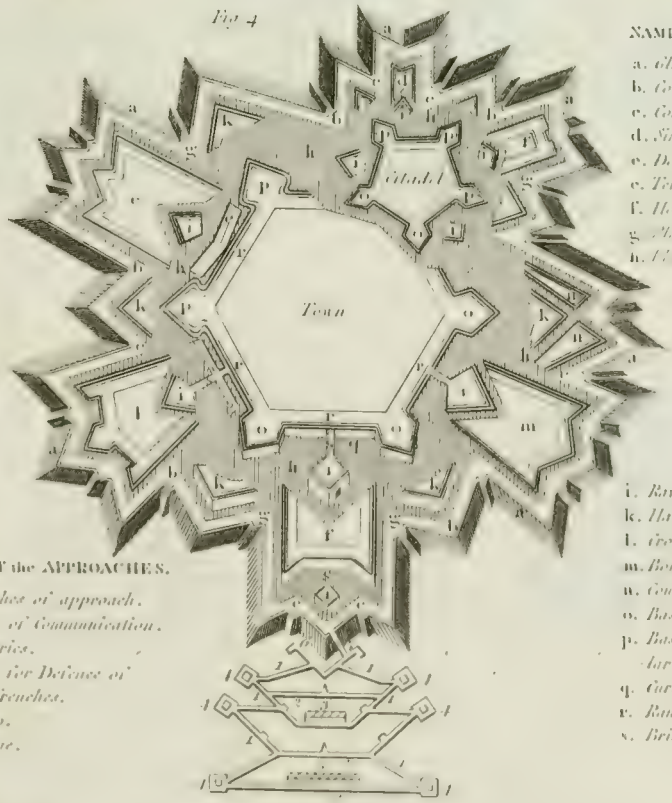


FORTIFIED PLACE



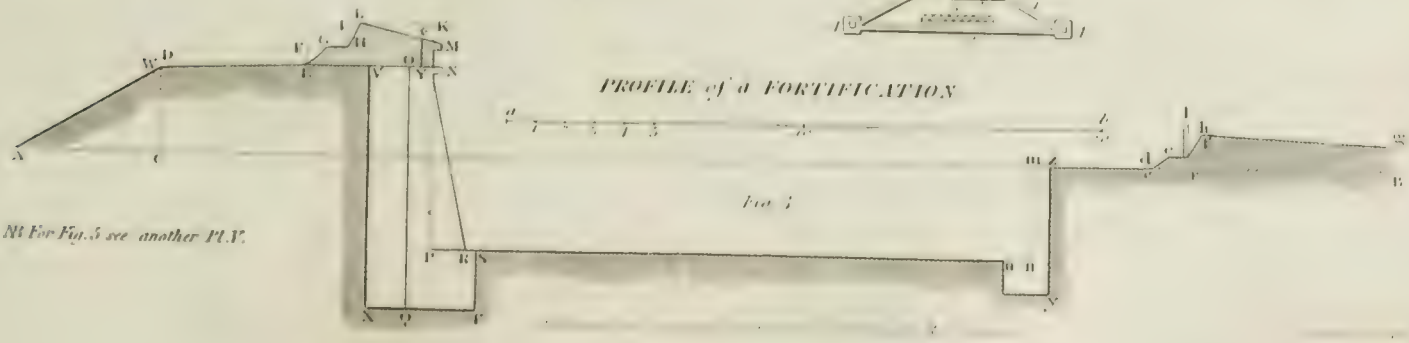
NAMES of the WORKS.

a. Glacis or Declivity.
b. Covert way.
c. Counterscarp.
d. Single Tenaille.
e. Double Tenaille.
e. Tenaille in the Dit.
f. Horn Work.
g. Place of arms.
h. The Moat or Ditch
i. Ravelins.
k. Half Moons.
l. Crown Work.
m. Bonnet or Priests cap.
n. Counter Guard
o. Bastions.
p. Bastions with circular Flanks
q. Curtain.
r. Rampart or Wall.
s. Bridges.

NAMES of the APPROACHES.

1. Trenches of approach.
2. Lines of Communication.
3. Batteries.
4. Forts for Defence of the Trenches.
5. a Sap.
6. a Mine.

PROFILE of a FORTIFICATION

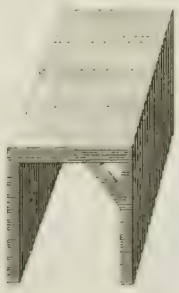


Nt For Fig. 5 see another Pl. V.

Fig. 5.

GALLERY.

Fig. 7.

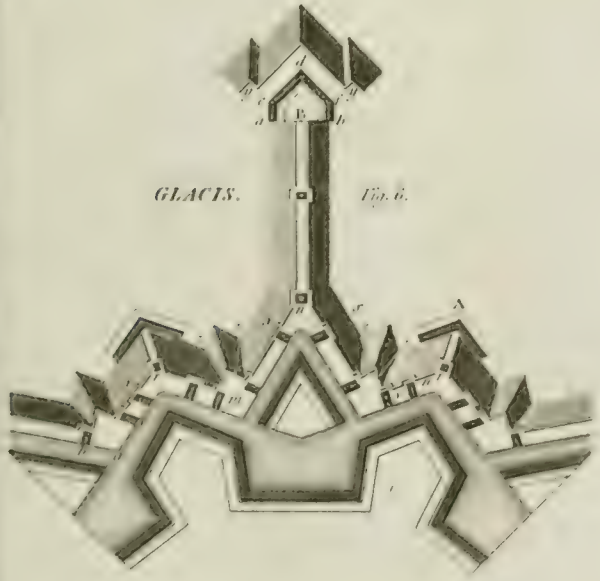


GABION.

Fig. 8.

GLACIS.

Fig. 6.



A. B. *Bastions.*
C. *Ravelin.*
D. *Line of Communication of the Attacks.*
E. *First Parallel.*
F. *Second Dº.*
G. *Third Dº.*
H. *The Approaches.*
I. *Places of Arms.*
K. *Square Redoubts to prevent Sallies.*
L. *Traverses in the third Parallel.*
M. *Batteries (a Cannon b Mortars.*
N. *Glacis.*
O. *Places of Arms in the covert way.*
P. *The Ditch.*
Q. *Bridge of Communication.*
R. *A River.*
S. *Rising Ground.*

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Horn-work.

Fig. 1

Double Horn-work or Crown-work.

Fig. 2

LINE.

Fig. 3.

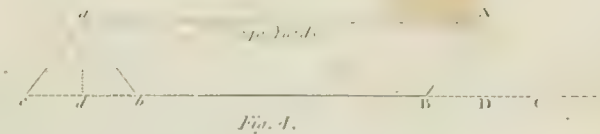


Fig. 4.

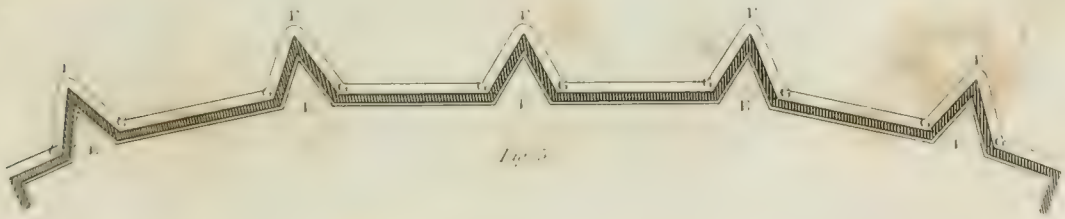


Fig. 5

Lunette

Fig.

For Fig. 7. see Plate V. Fig. 4.

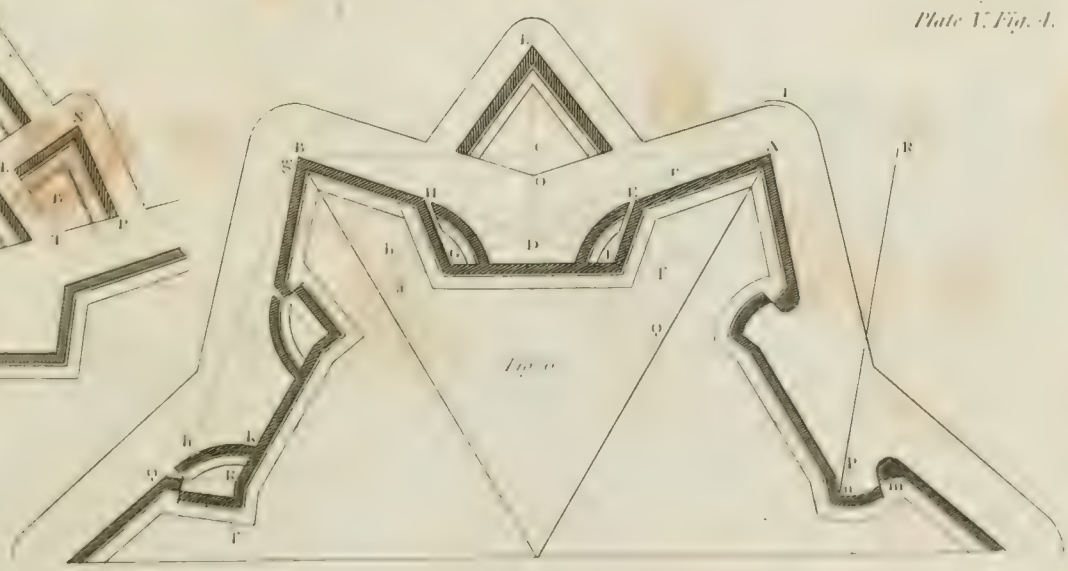
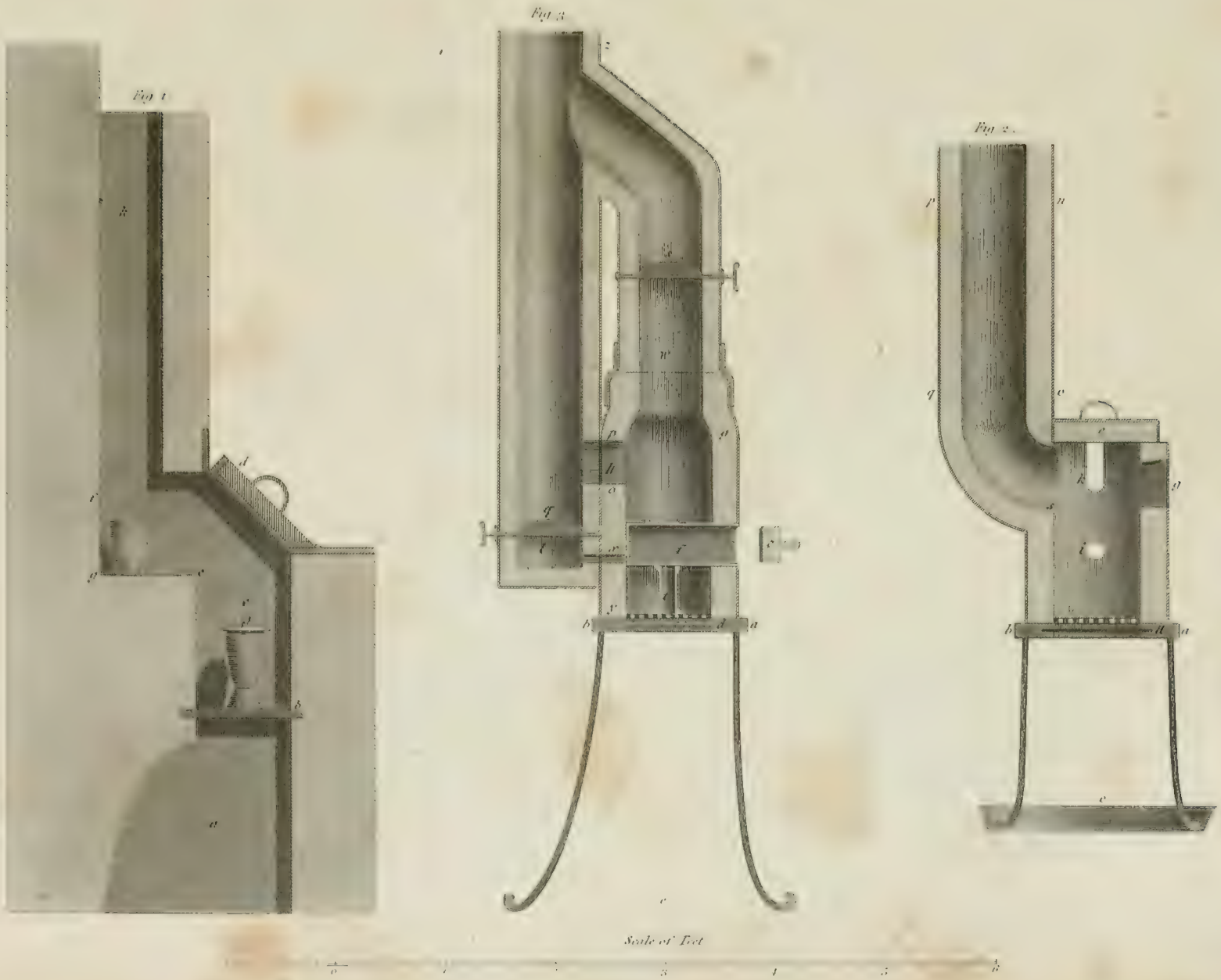


Fig. 6

FURNACE.

PLATE I.



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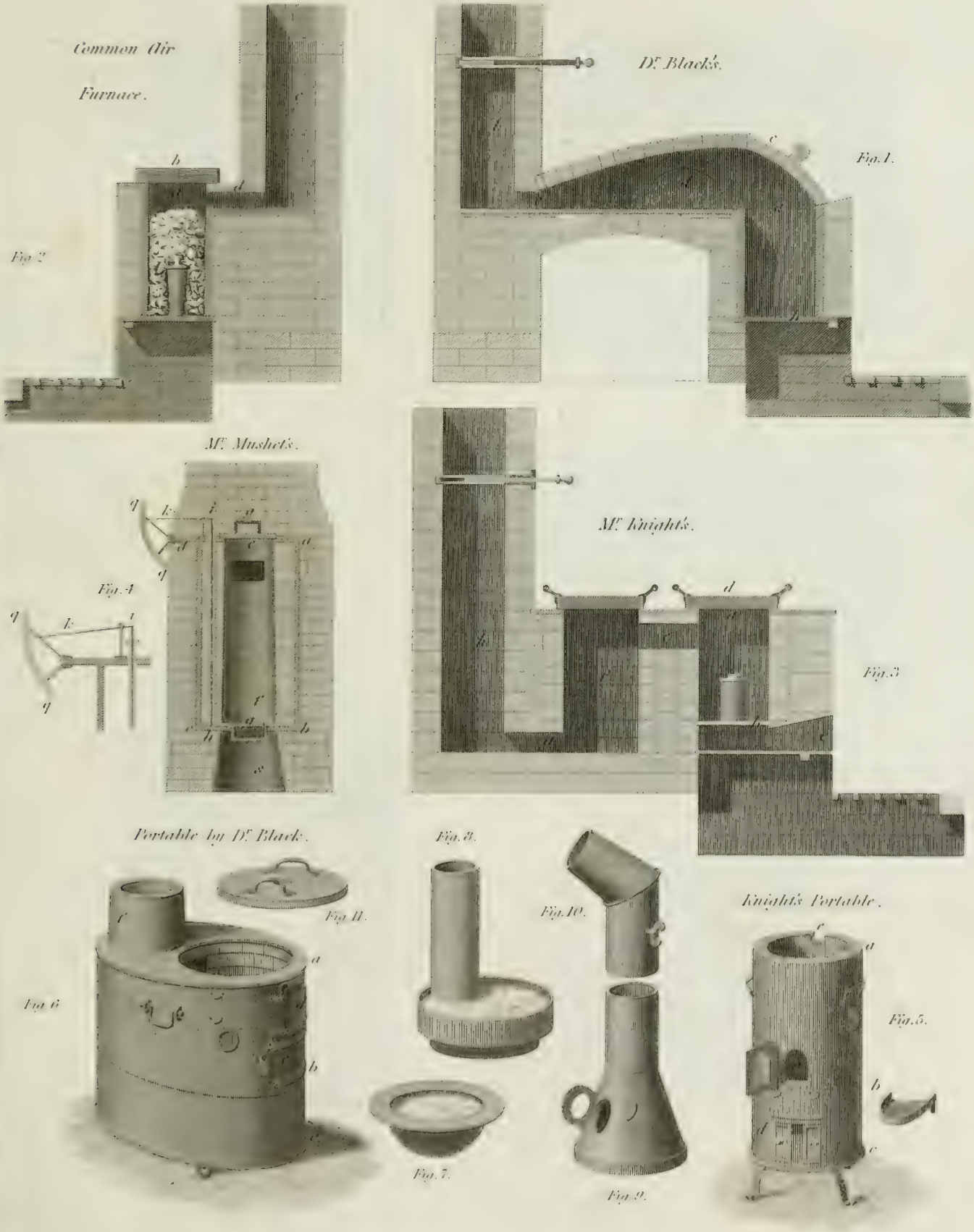

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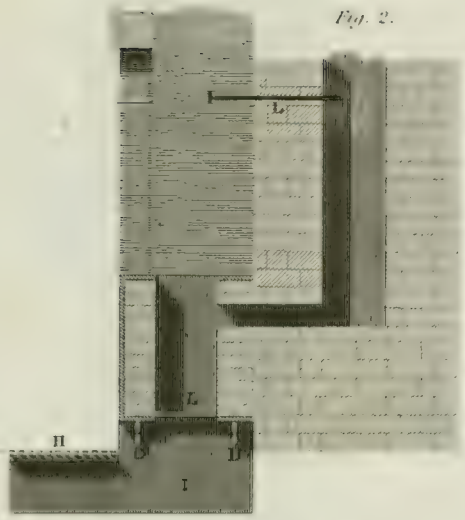
Furnaces used by Mr. Mushet for his experiments on Iron & Steel.

Fig. 2.



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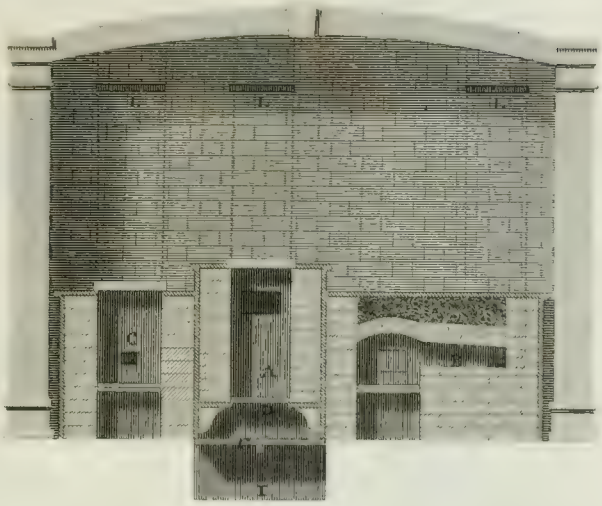


Section of the Tobacco pipe makers Furnace.

Fig. 4.

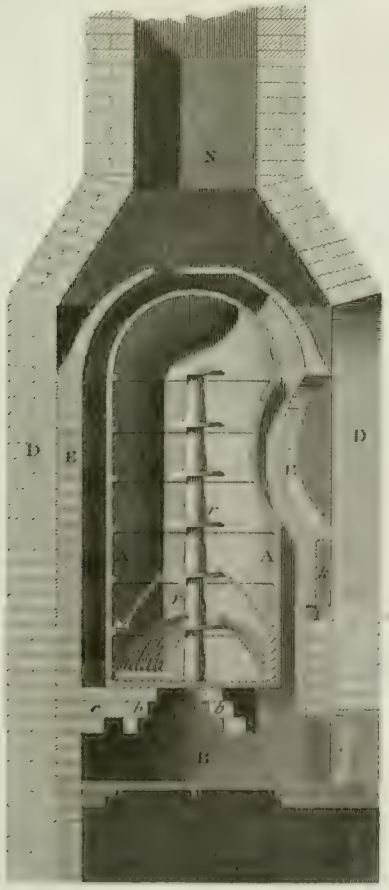
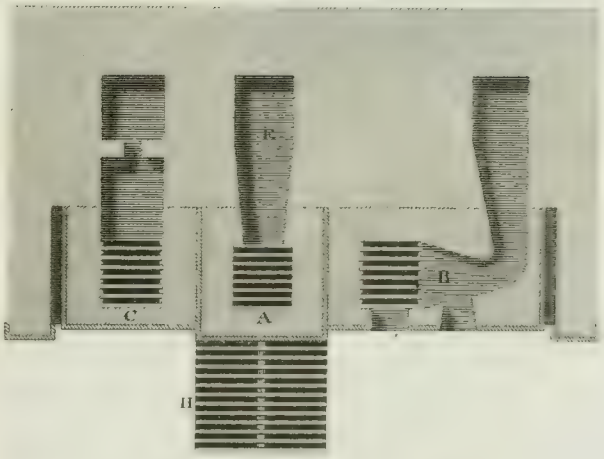
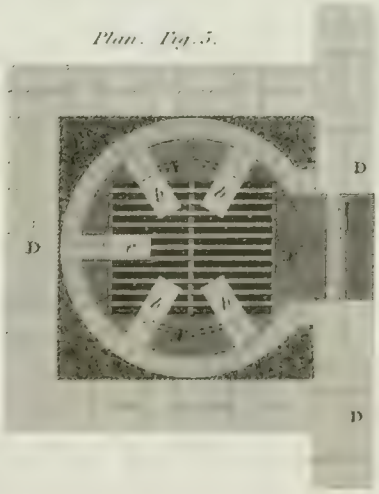


Fig. 3.



Plan. Fig. 5.



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Furnace for Enamelling Watch Dial Plates.

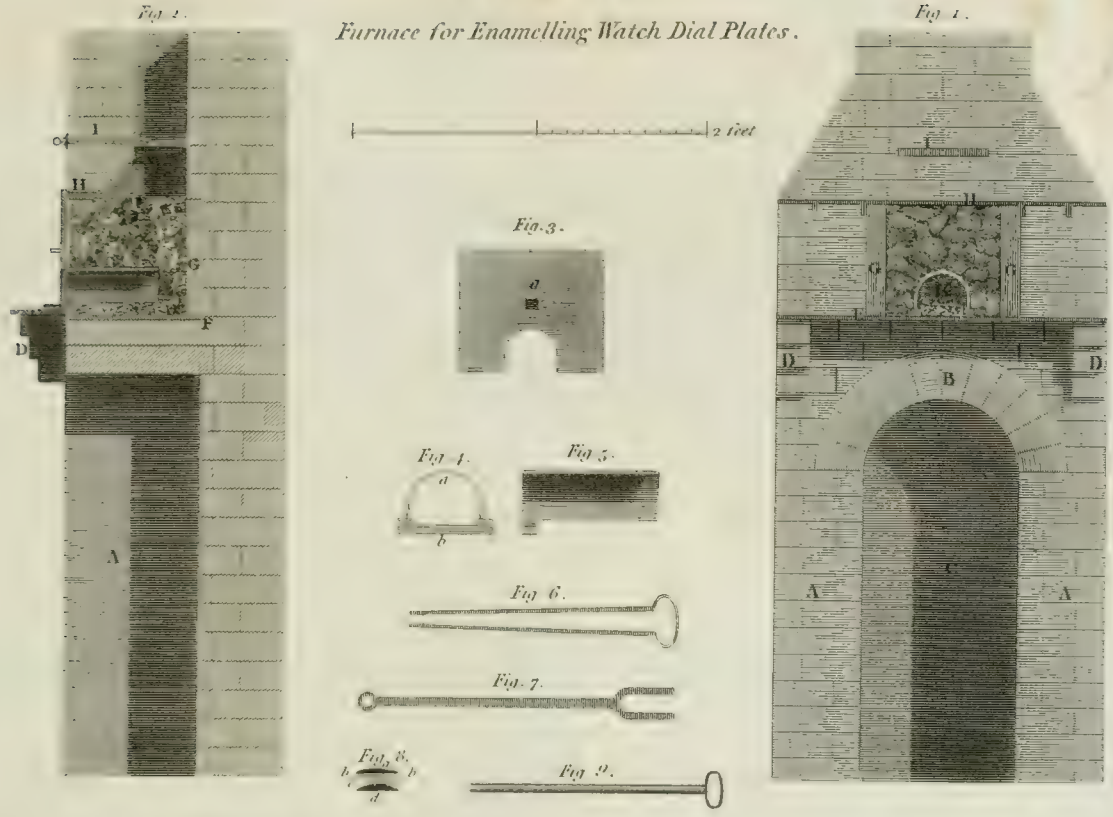
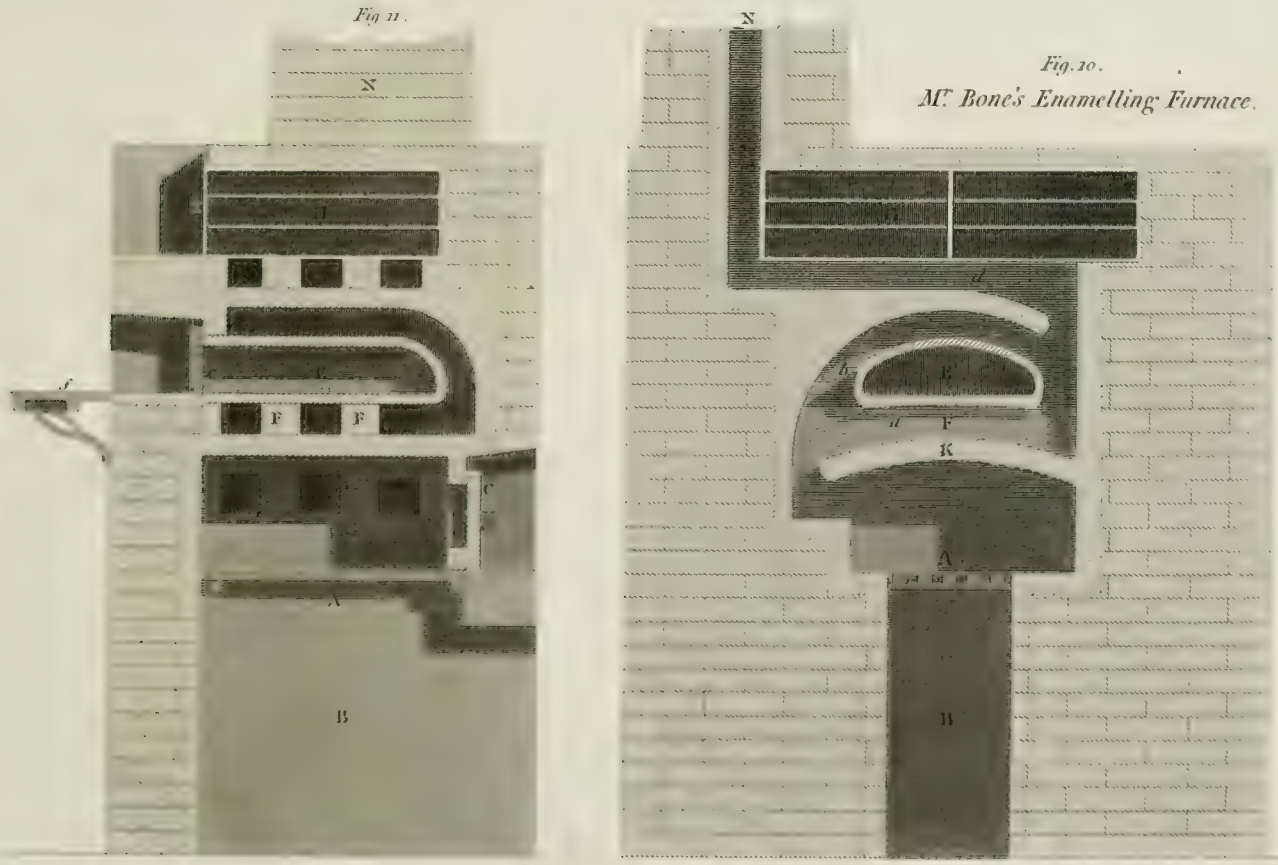


Fig. 10.

Mr. Bone's Enamelling Furnace.



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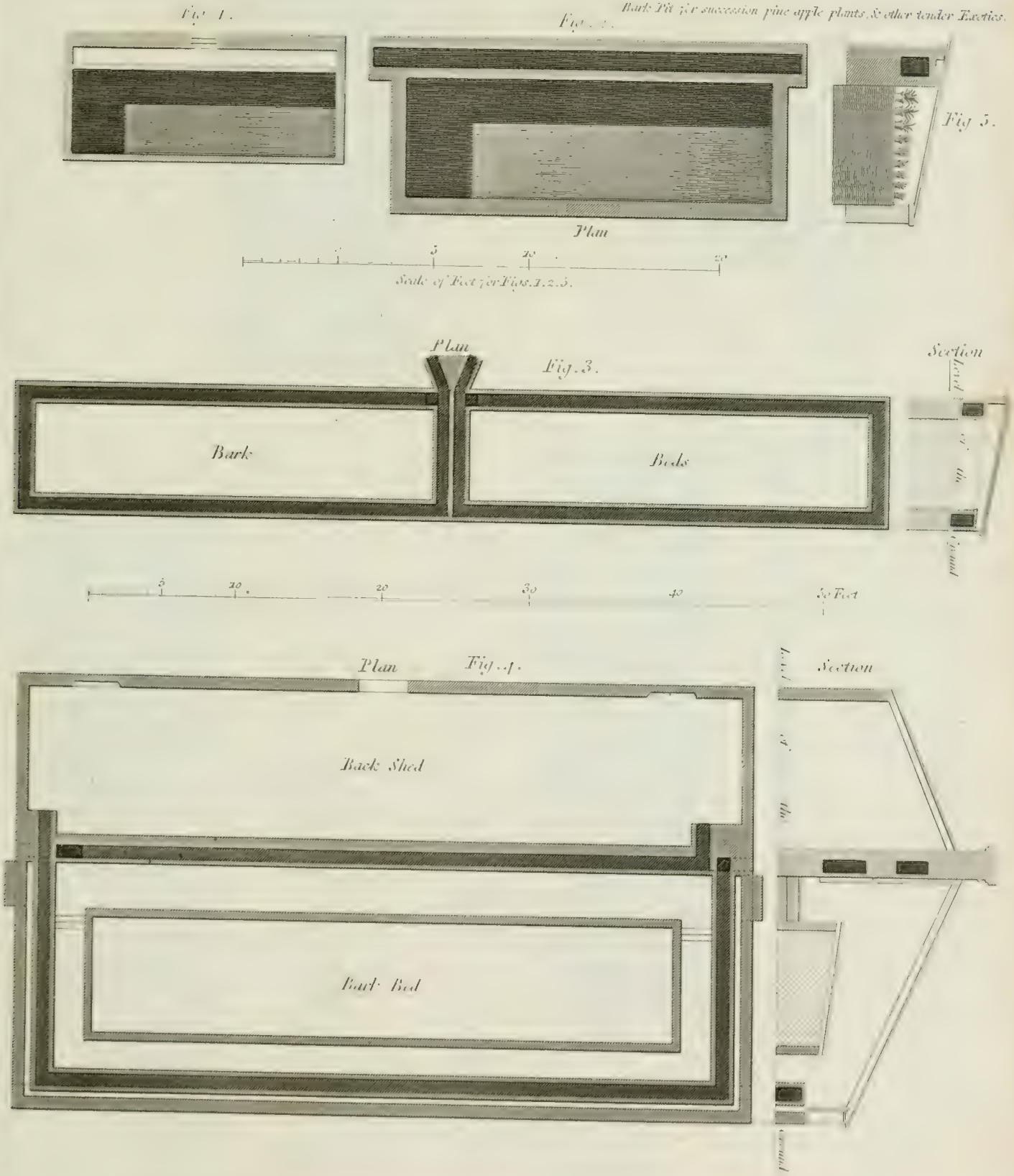
BARK-BEDS & PITS.



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CONSERVATORY AND GREENHOUSE.

Fig. 6.

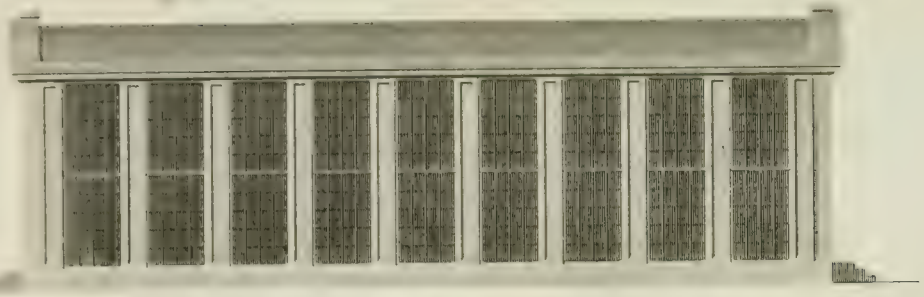


Fig. 5.

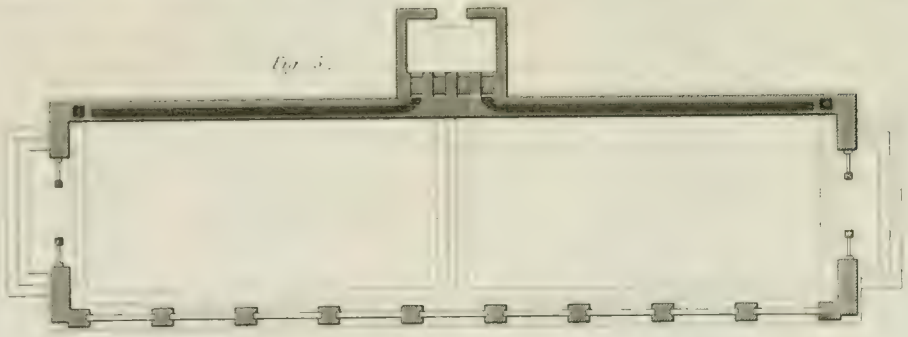


Fig. 1.

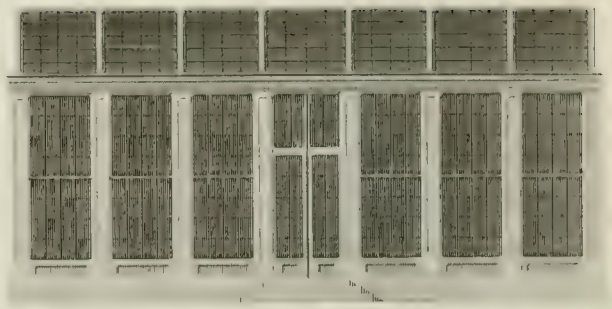


Fig. 1.

Fig. 2.

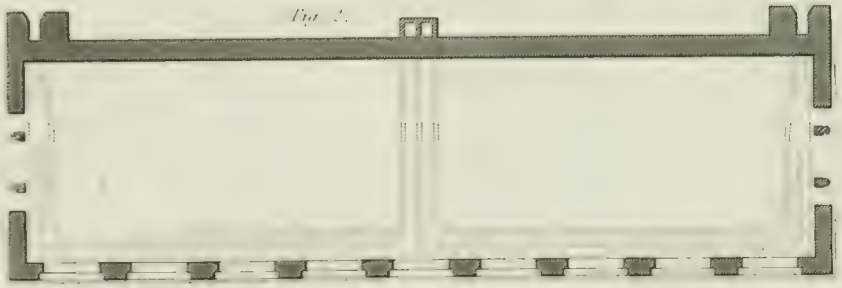
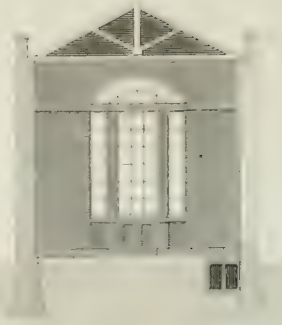


Fig. 3.



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Lowry Sc.

HOT - HOUSE.

Fig. 1. Elevation.

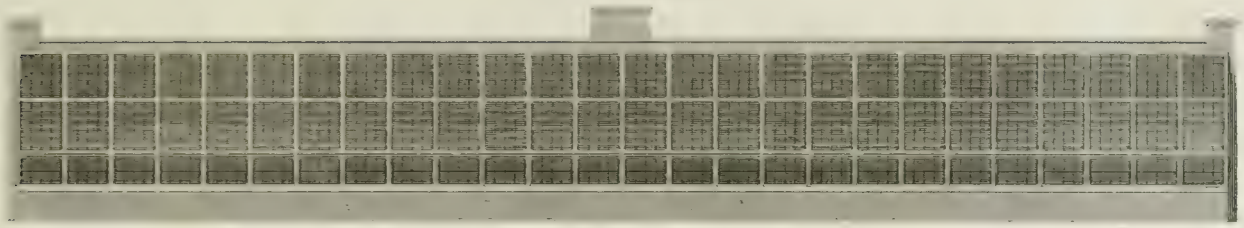

Fig. 2 Plan

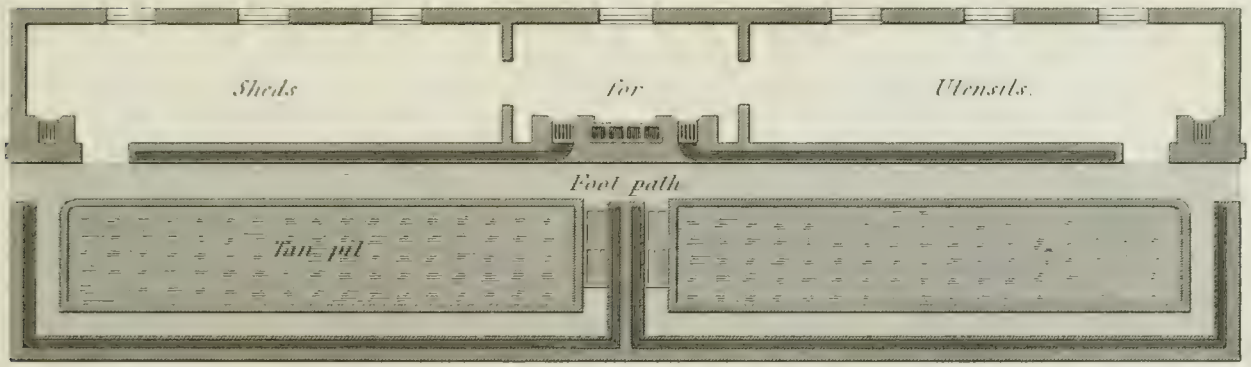

Fig 4.

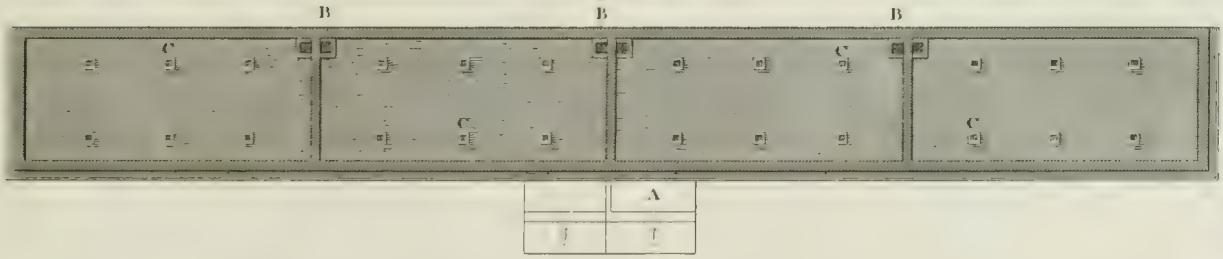

Fig 5

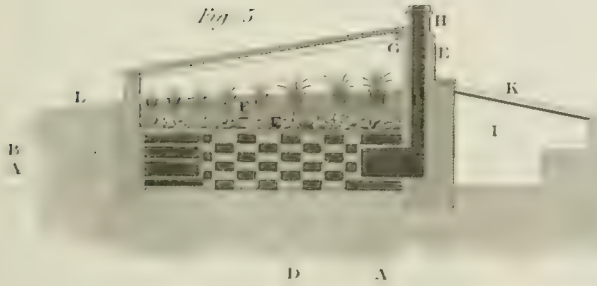

Fig 3

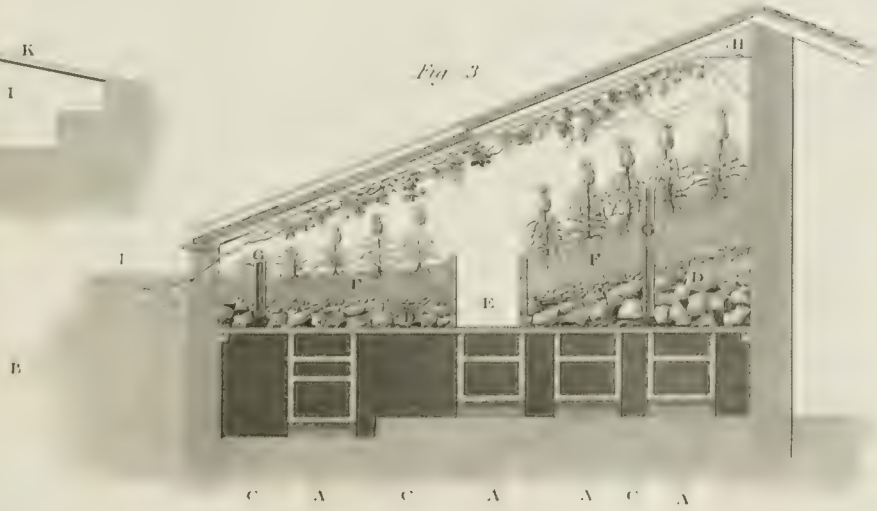

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Fig. 1.

DISTANCE

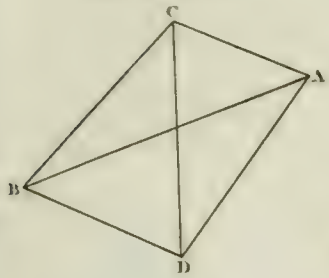


Fig. 2.

HORIZON

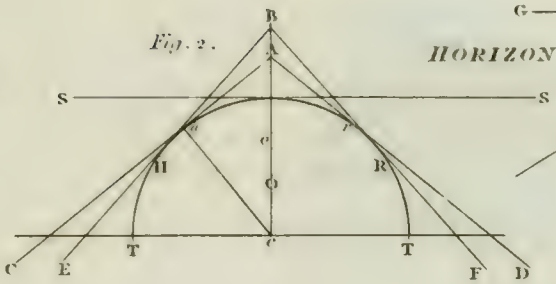


Fig. 3.

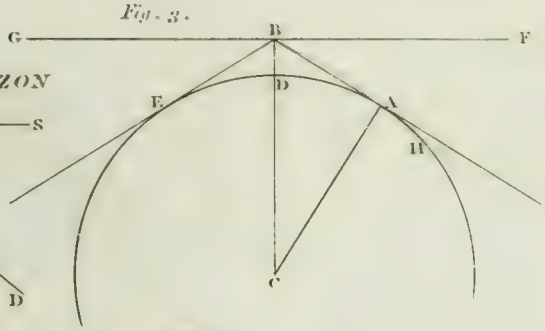


Fig. 6.

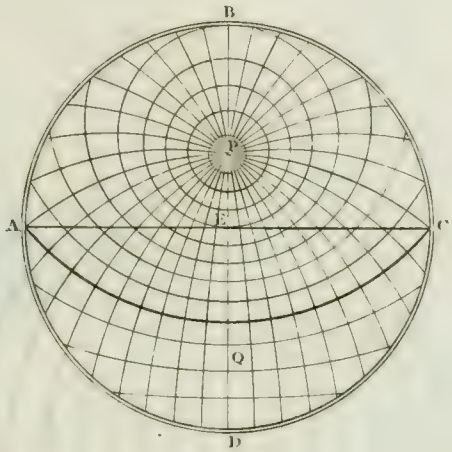
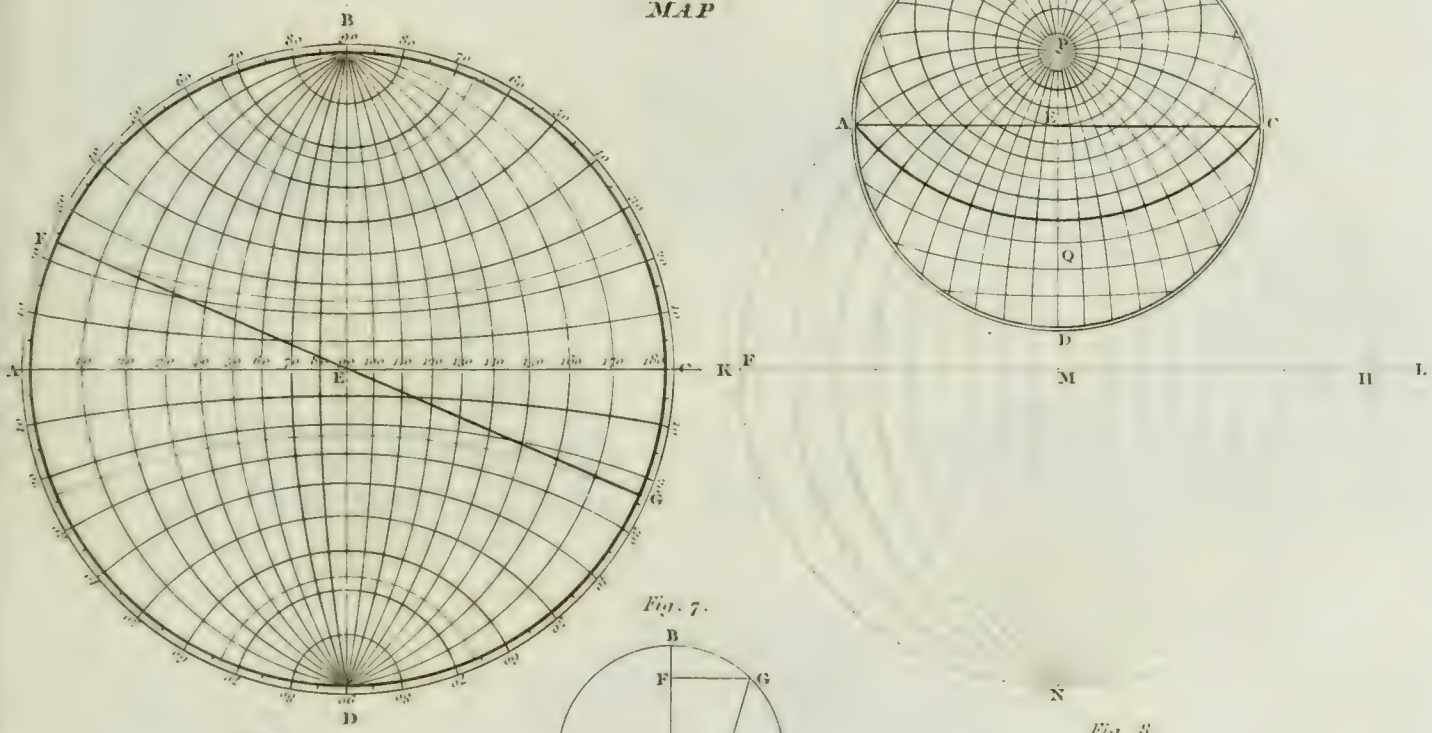


Fig. 5.

MAP



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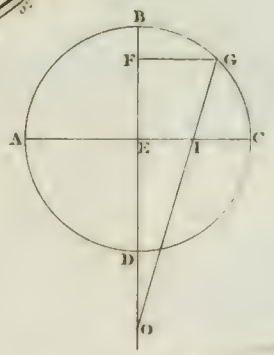
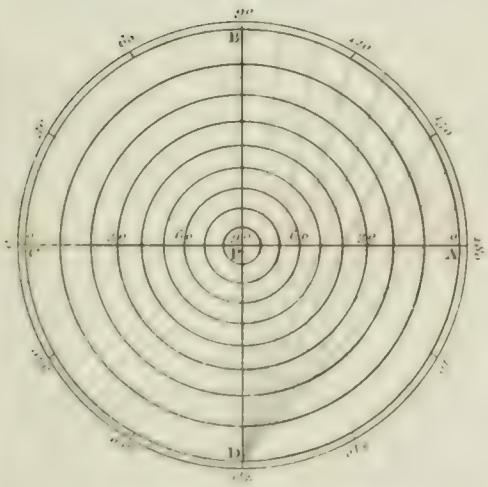


Fig. 4.



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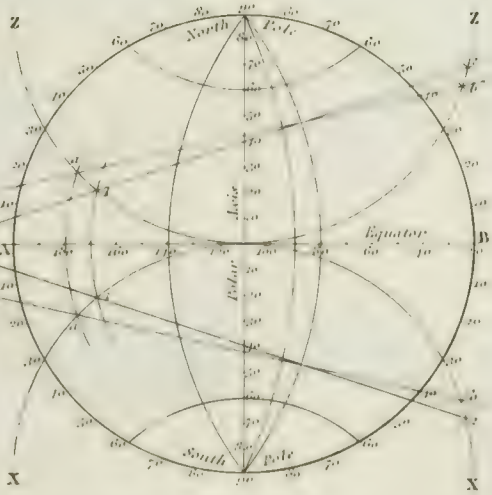

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W. Lowry Sculp.

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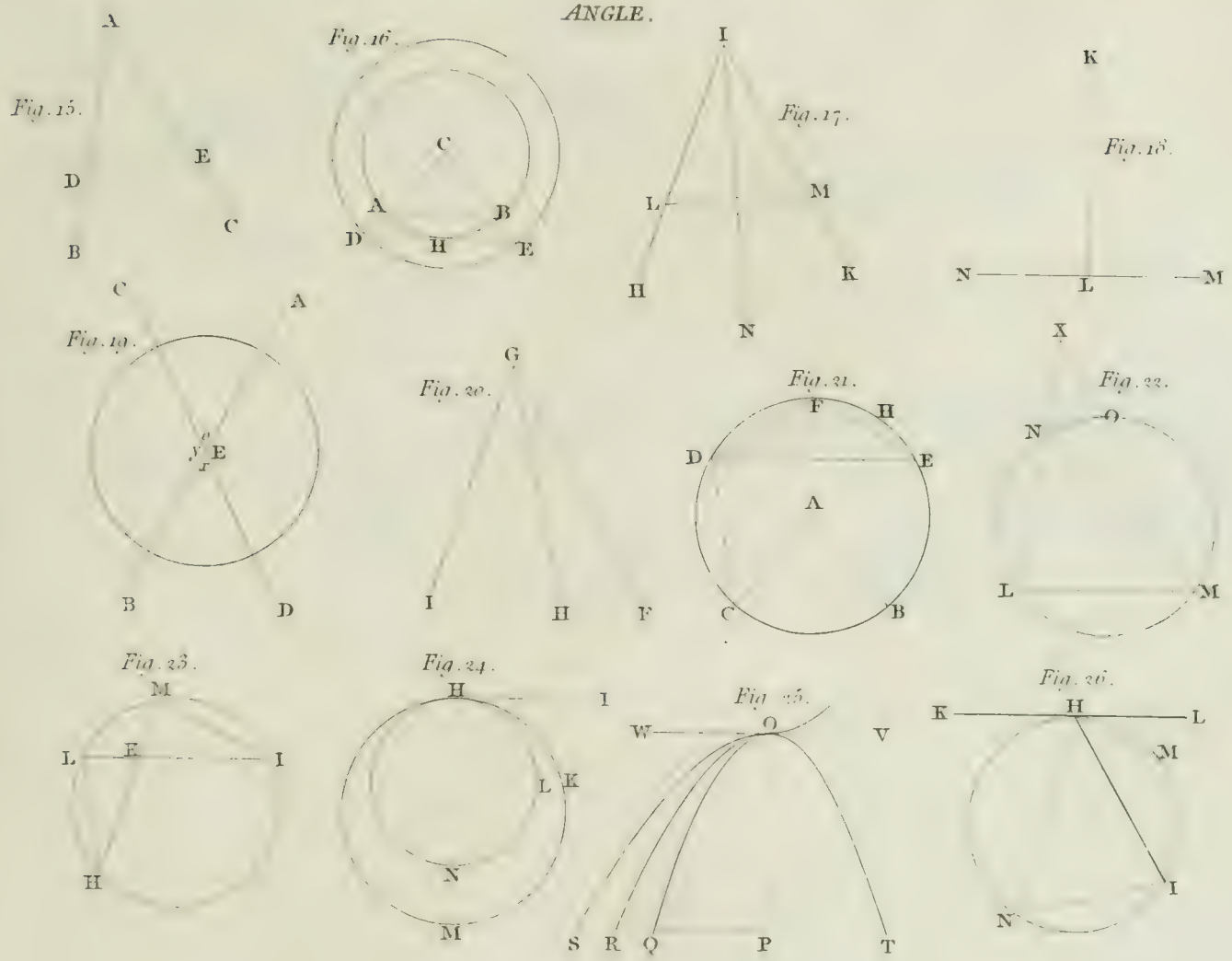
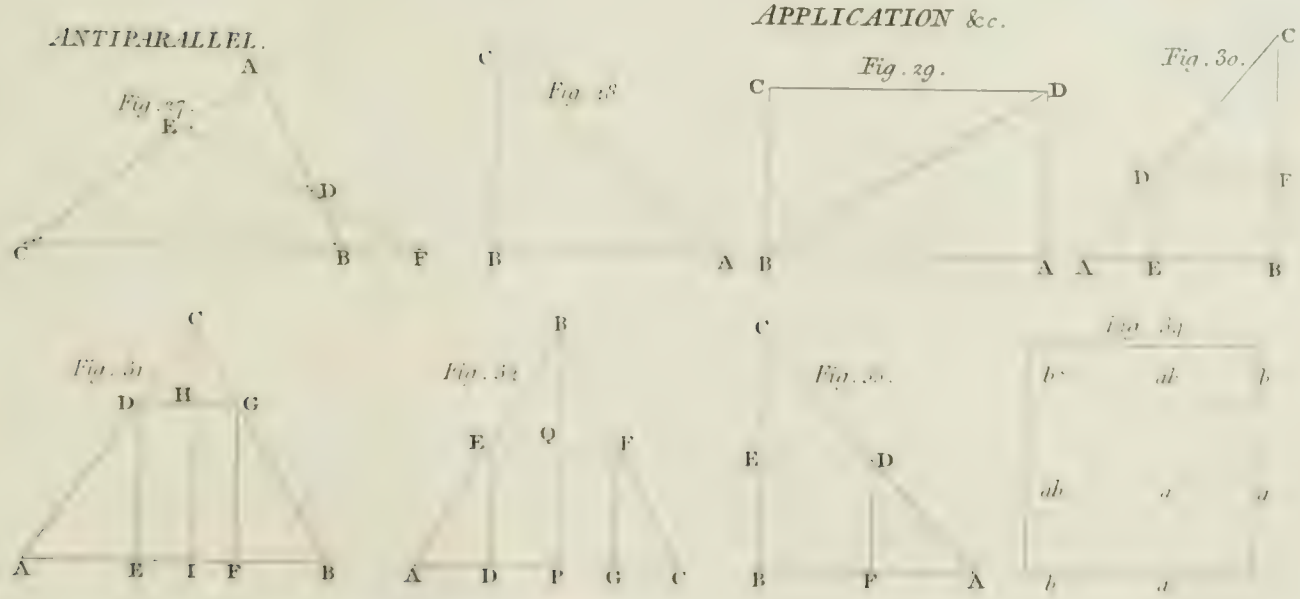
GEOMETRY.

ANGLE.



ANTIPARALLEL.

APPLICATION &c.



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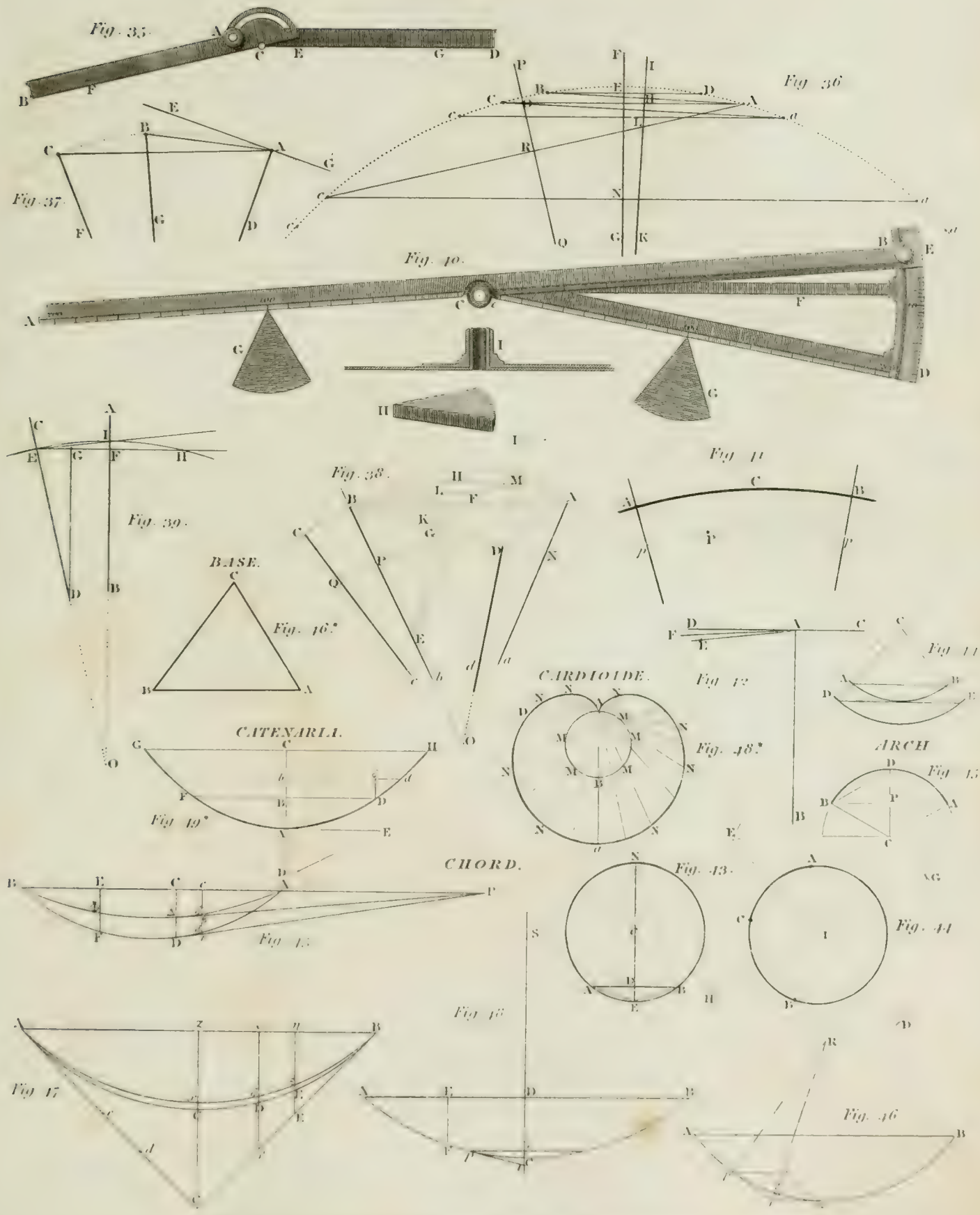
GEOMETRY.

BEVEL &c.



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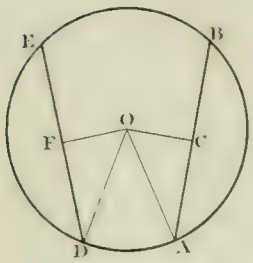
GEOMETRY.

CIRCLE.

Fig. 49.



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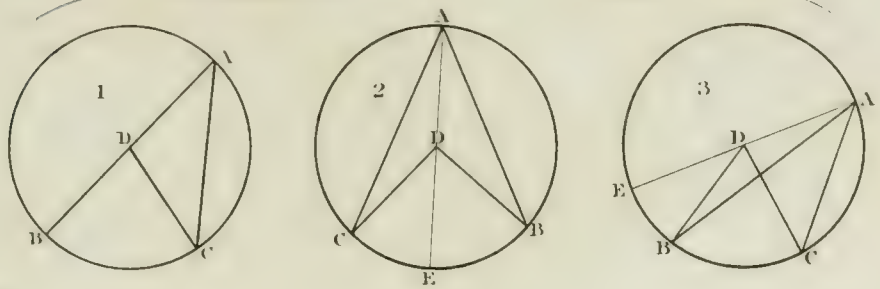

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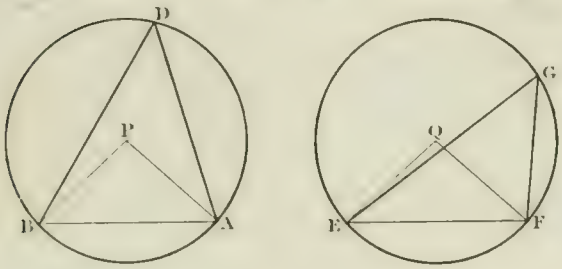

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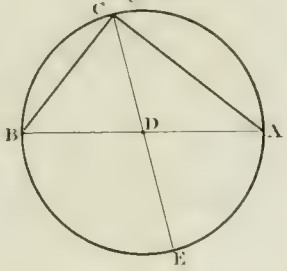

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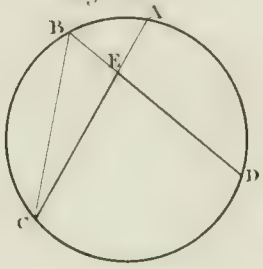

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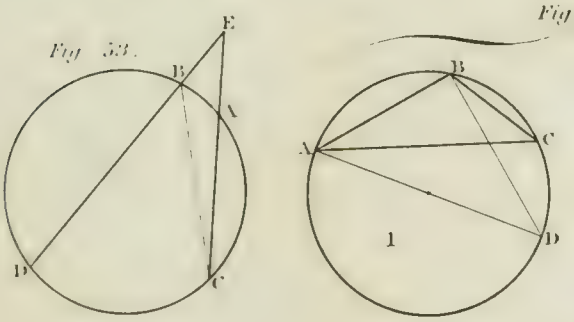

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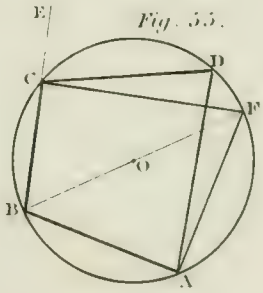
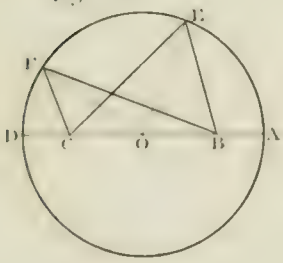


Fig. 56.



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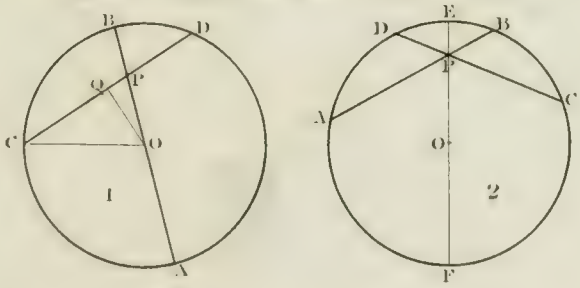

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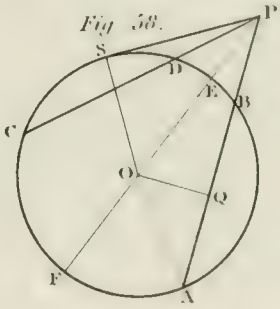

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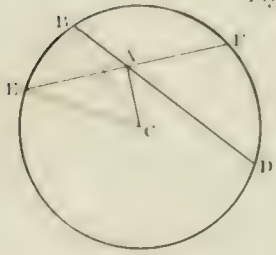

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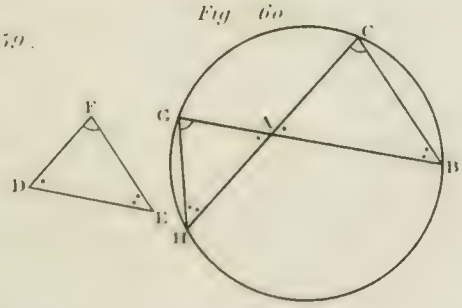

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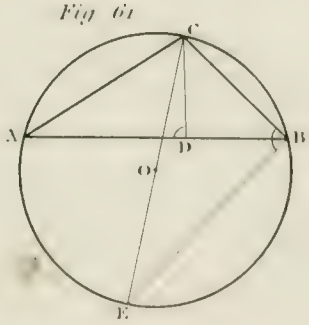

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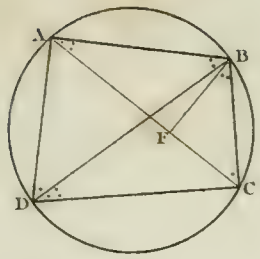
GEOMETRY.

CIRCLE.

Fig. 62.



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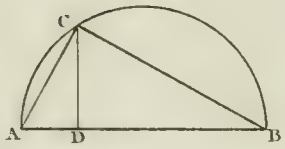

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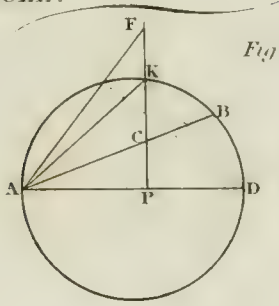

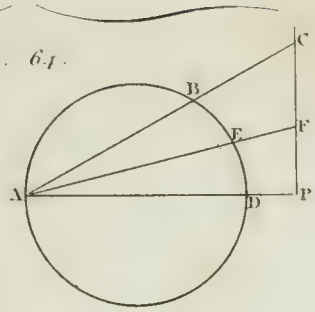

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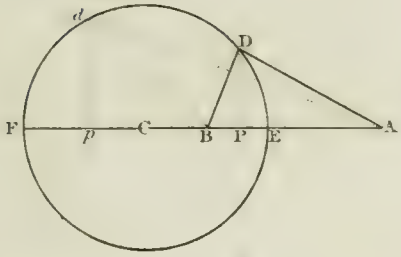
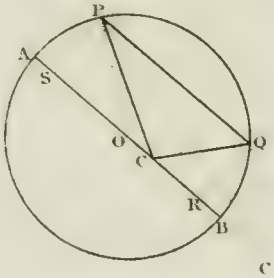


Fig. 66.



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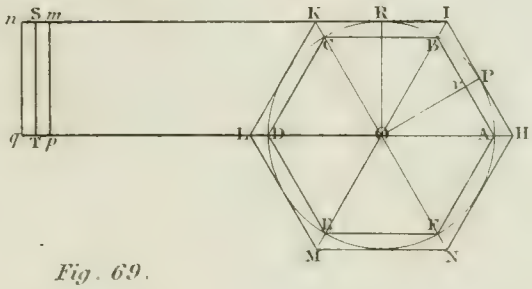

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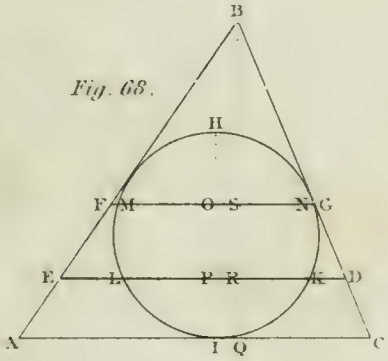
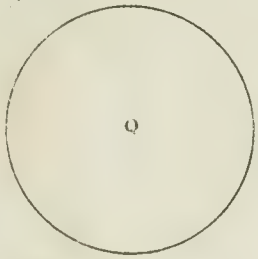
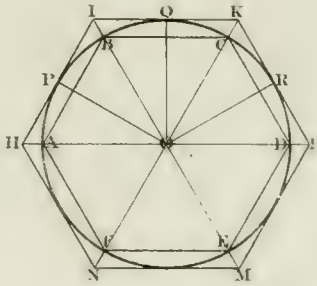
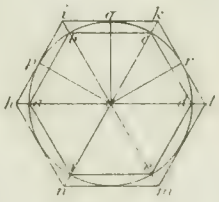


Fig. 69.







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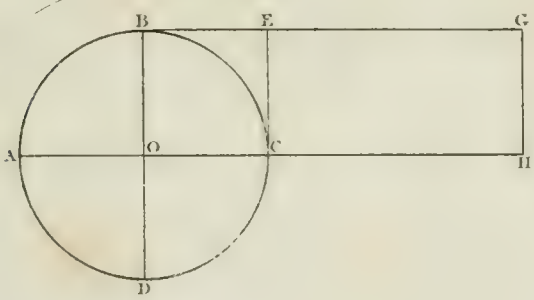


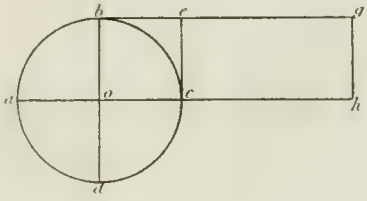


Fig. 71.

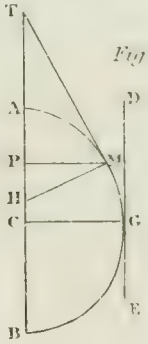


Fig. 72.

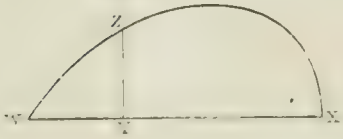
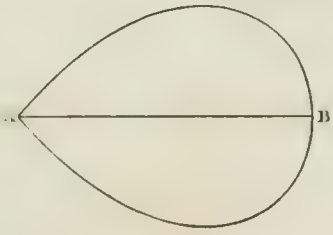
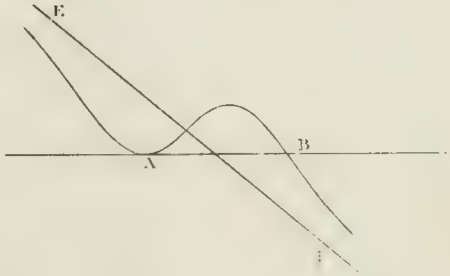


Fig. 73.





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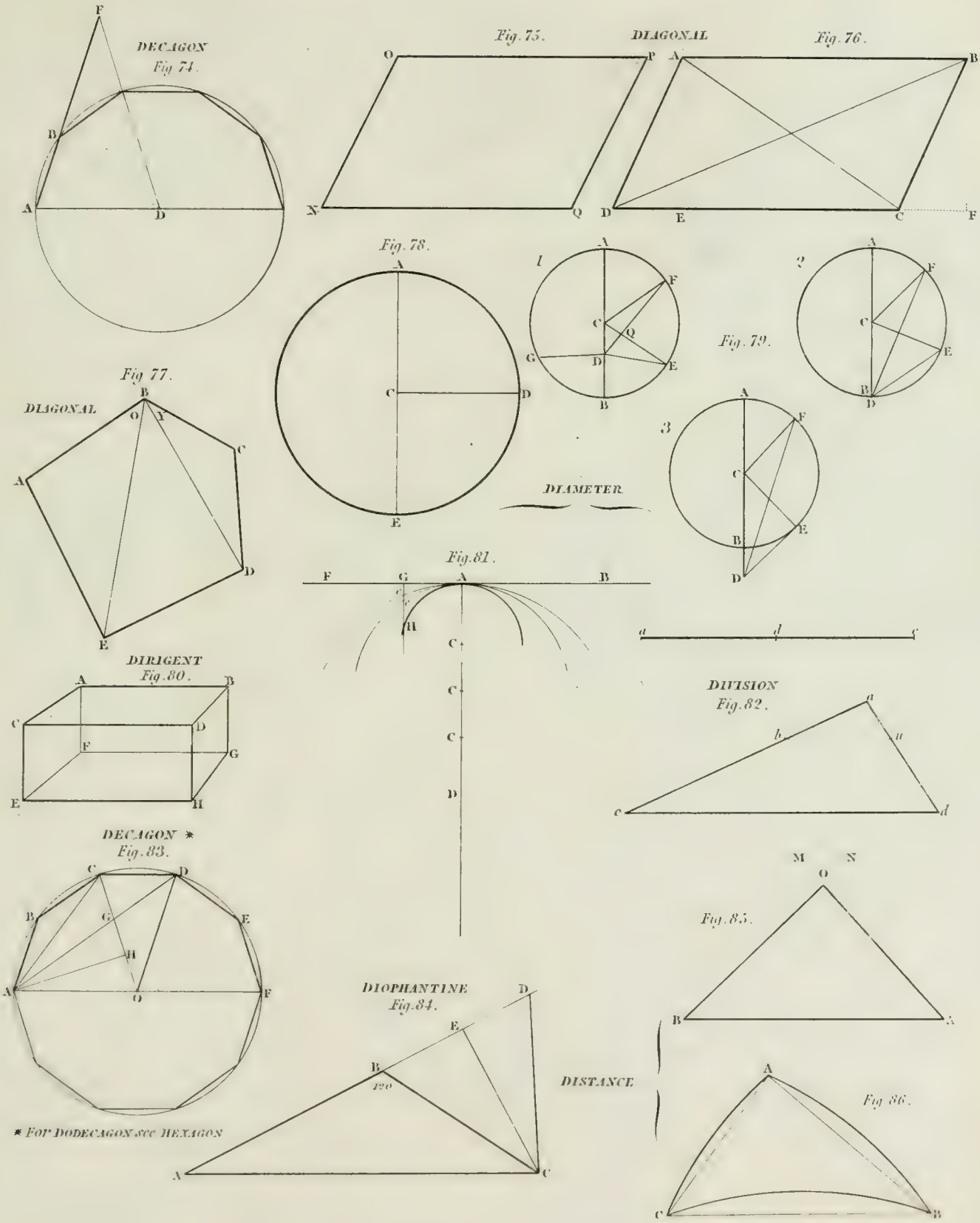

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GEOMETRY.

EXTREME & MEAN PROPORTION.

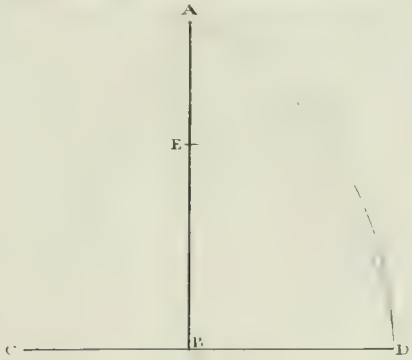


Fig. 87.

FRUSTUM.

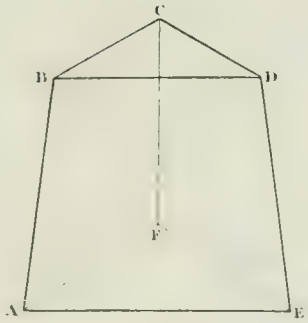


Fig. 88.

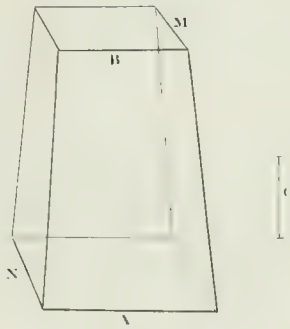
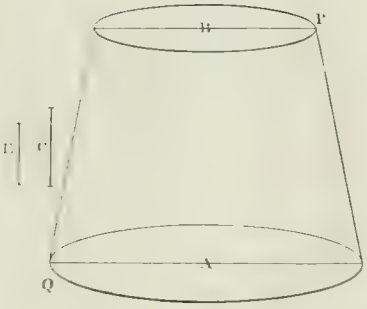


Fig. 89.



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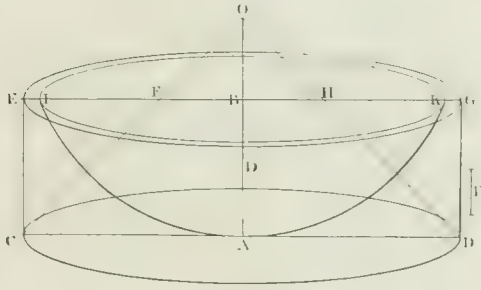

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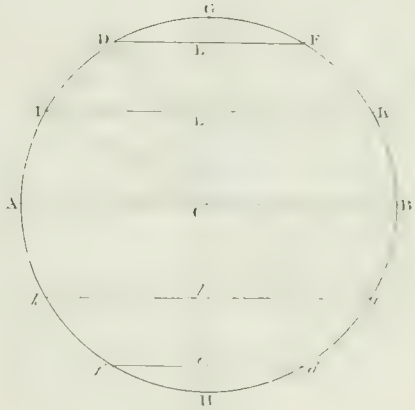

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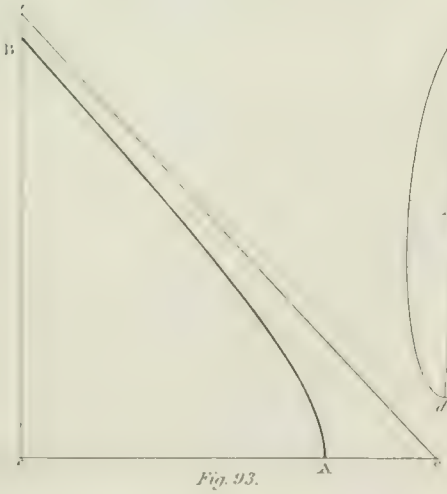
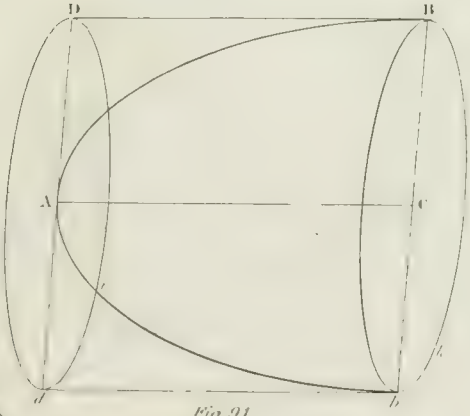


Fig. 93.



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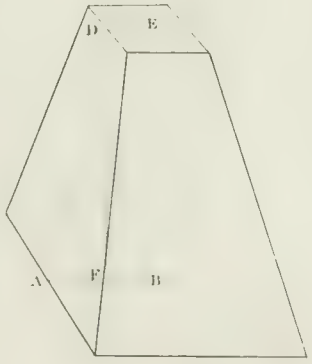

Fig. 95.

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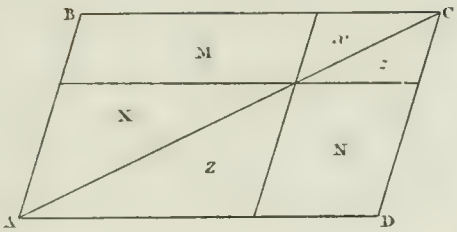
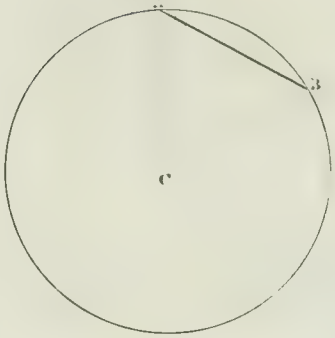
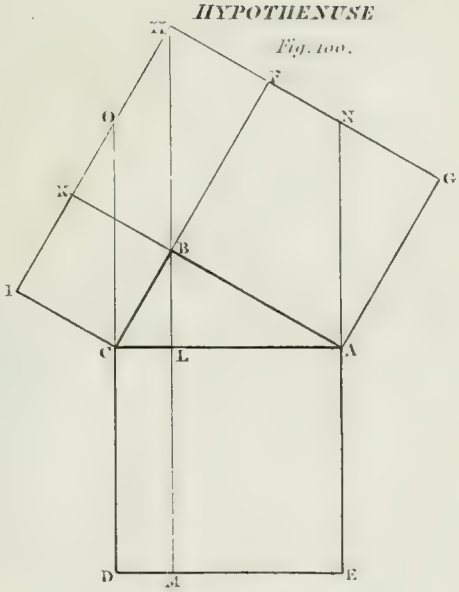
GNOMON
Fig. 96.



HEXAGON
Fig. 97.



HYPOTHENUSE
Fig. 100.



HONEY Comb
Fig. 98.

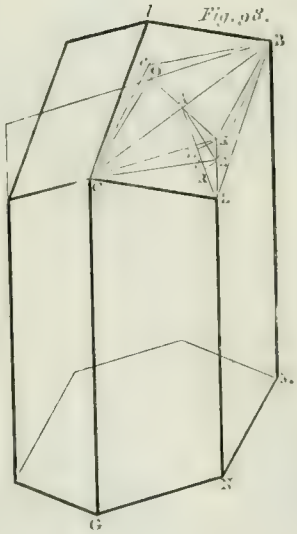
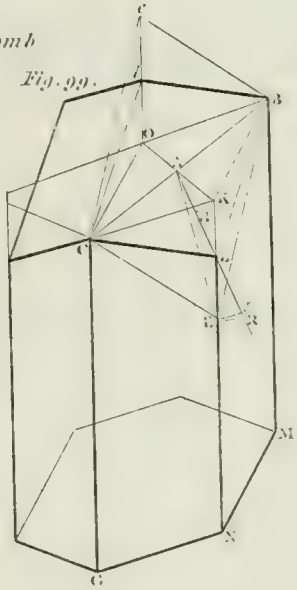
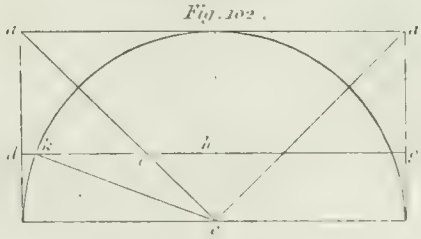


Fig. 99.



INDIVISIBLES
Fig. 102.



ISOSCELES Triangle

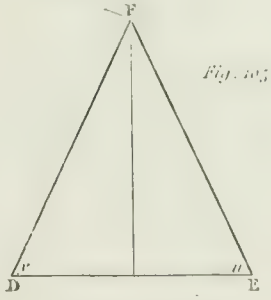


Fig. 105

INCLINATION of Planes
Fig. 101.

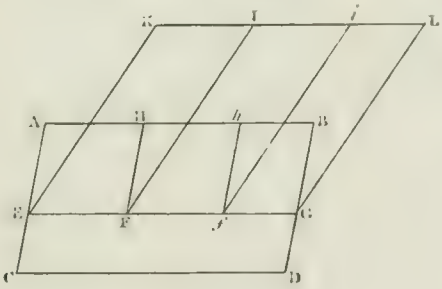
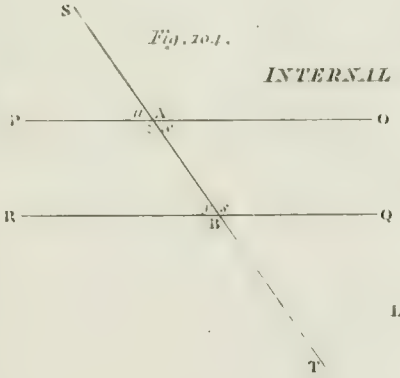
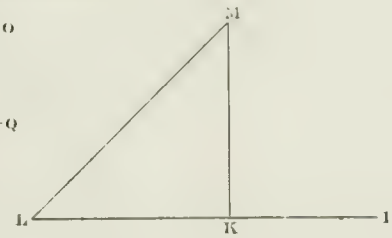


Fig. 104.



INTERNAL Angle
Fig. 103.



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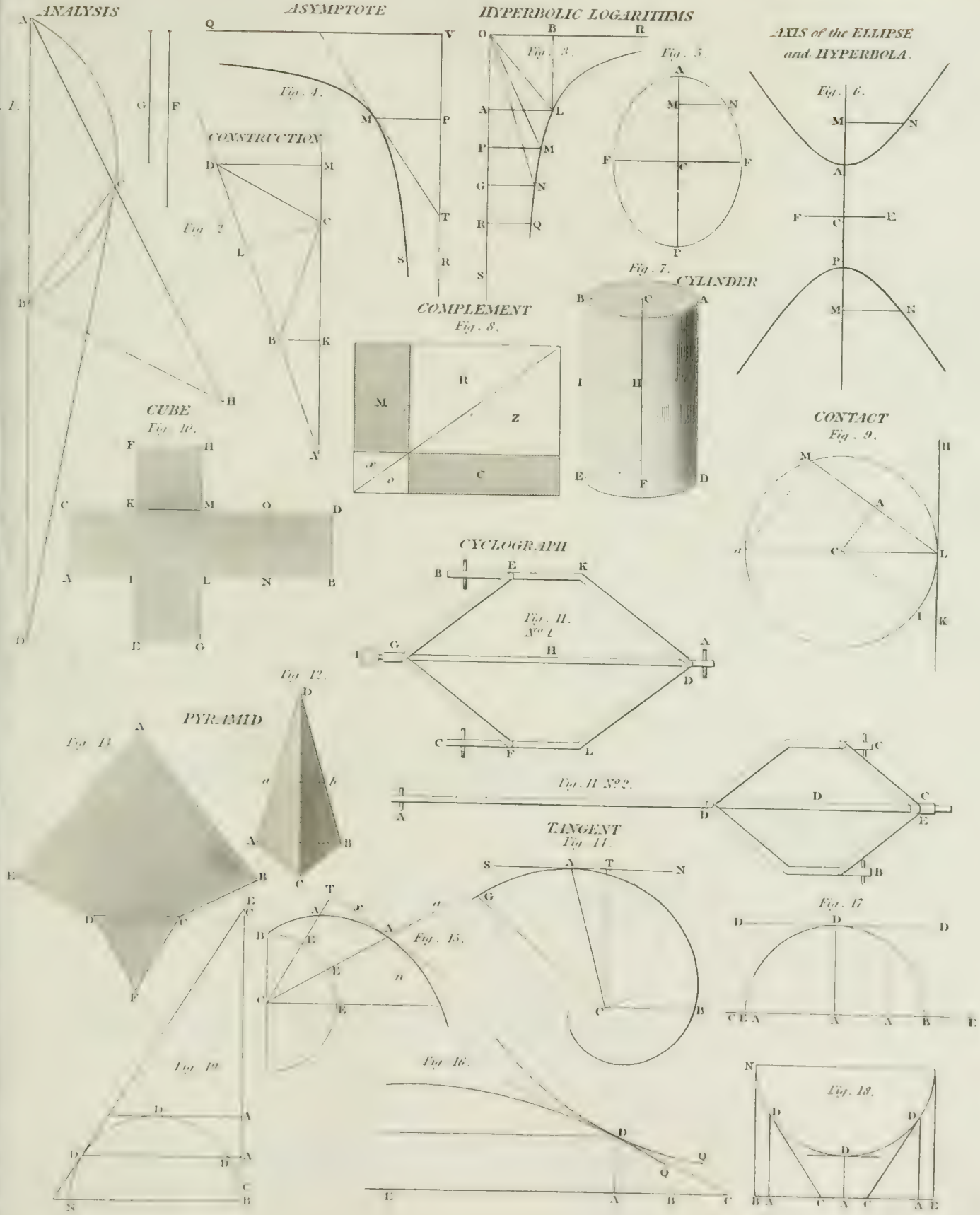
GEOMETRY.

FLUXIONS.



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GEOMETRY.

LINE.

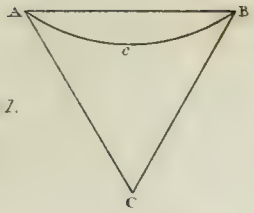
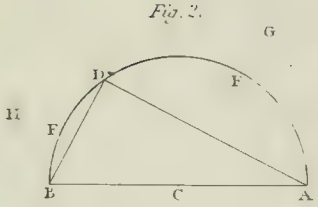


Fig. 1.

Fig. 2.



LUNES.

Fig. 3.

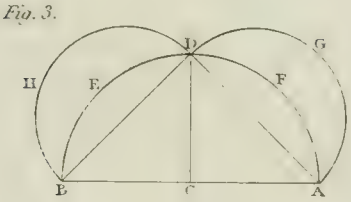


Fig. 3.

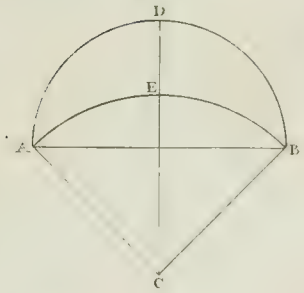
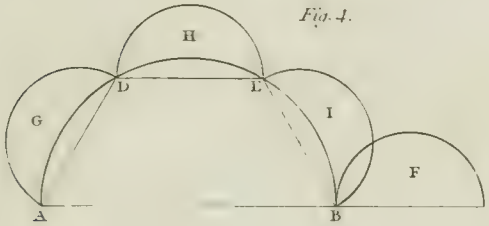


Fig. 4.



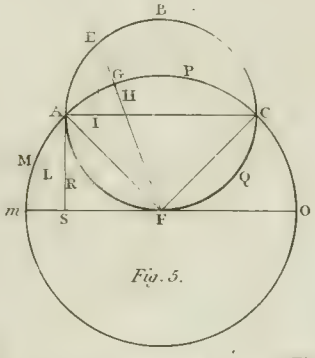


Fig. 5.

MULTIPLICATION.

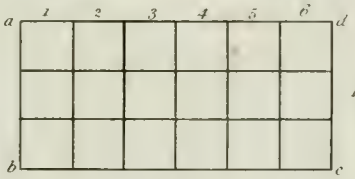


Fig. 6.

MULTIPLICATION.

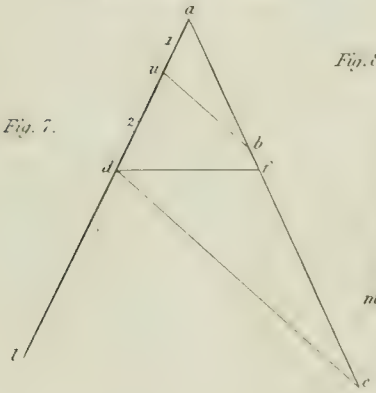
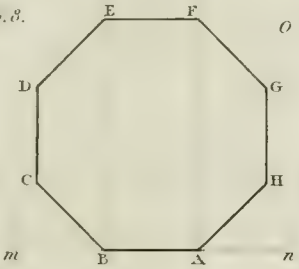


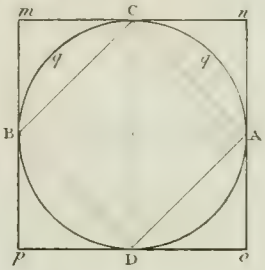
Fig. 7.

Fig. 8.



OCTAGON.

Fig. 9.



PARALLEL.

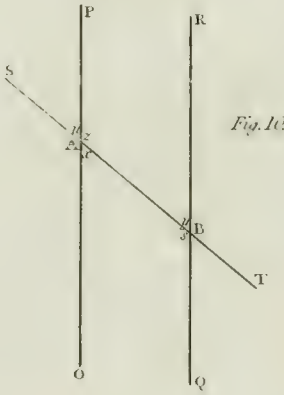


Fig. 10.

PARALLEL RULER.

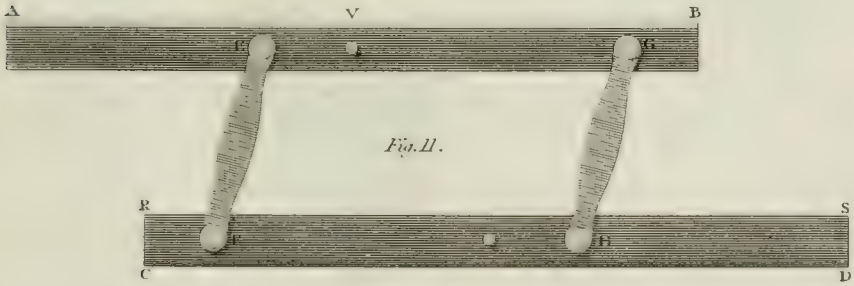
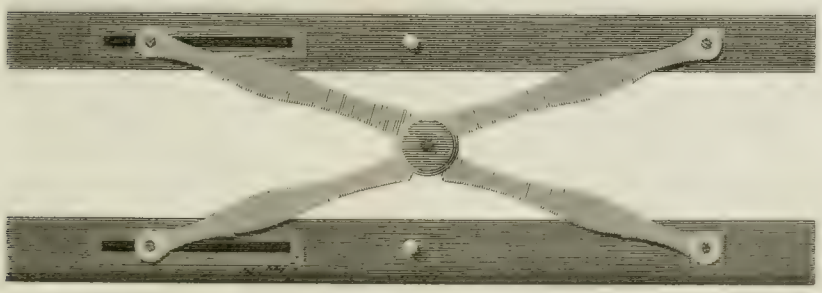


Fig. 11.

Fig. 12.



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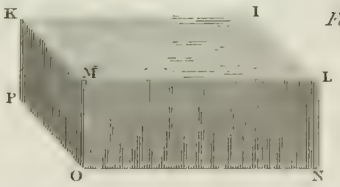


Fig. 13.

PARALLELOGRAM.

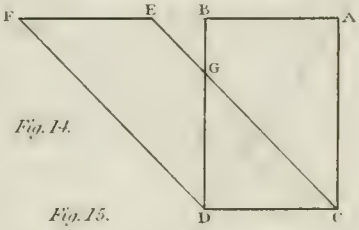
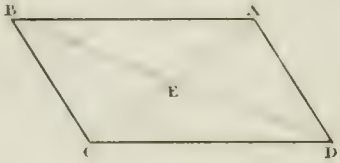


Fig. 14.

Fig. 15.



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PELECOIDES

Fig. 16.

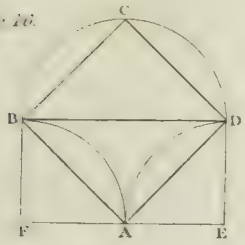
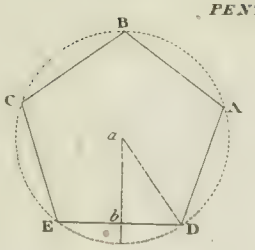


Fig. 17.

PENTAGON



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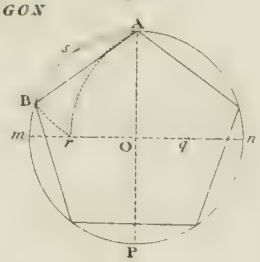

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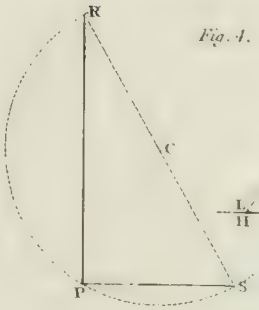

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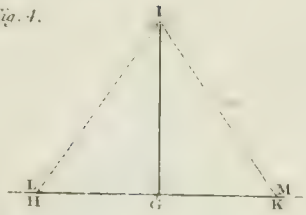

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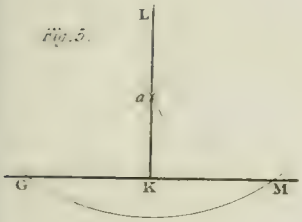


POLYGON

Fig. 6.

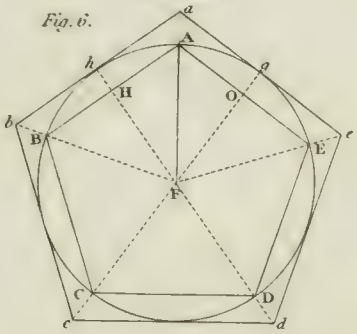


Fig. 7.

POLYGONOMETRY

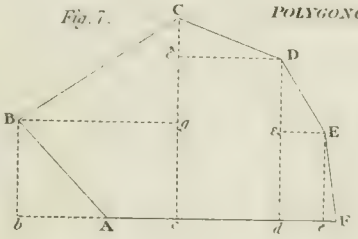


Fig. 8.

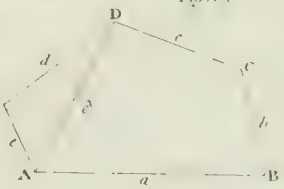


Fig. 9.

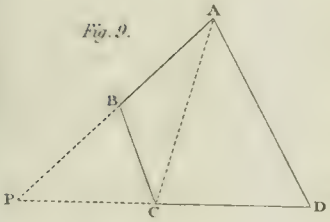


Fig. 10.

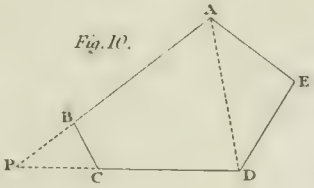
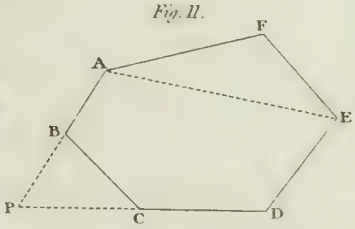


Fig. 11.



PORISM

Fig. 12.

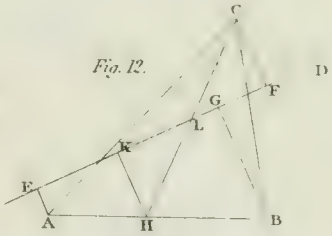
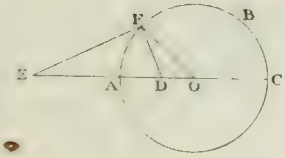


Fig. 13.



PRISM

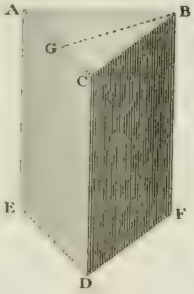


Fig. 15.

Geometry of POSITION

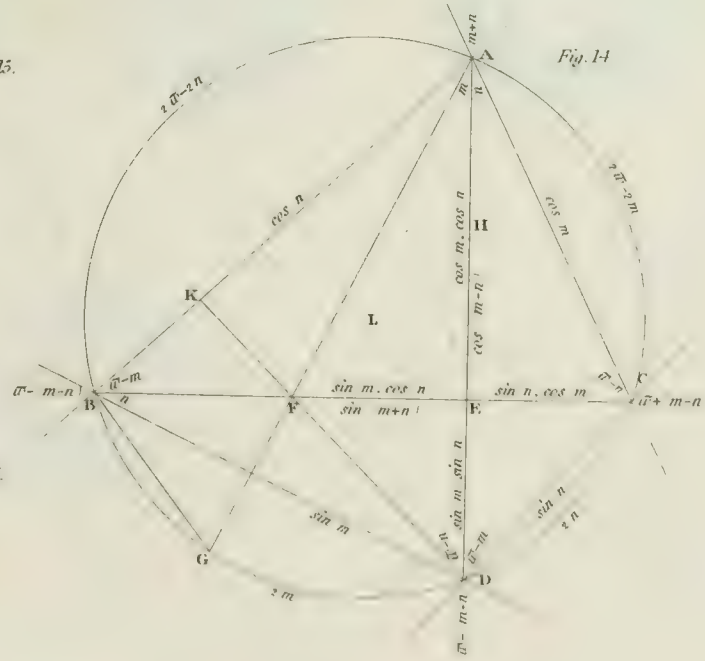
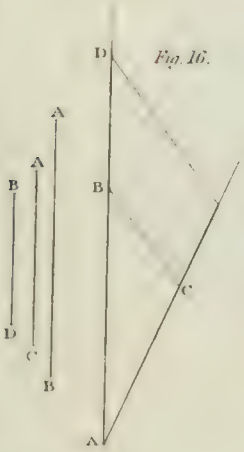


Fig. 14

Fig. 16.



PROPORTIONAL

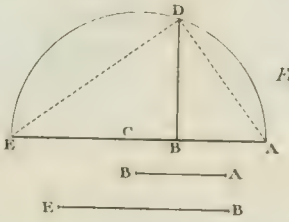


Fig. 17.

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Fig. 1.

QUALITY.

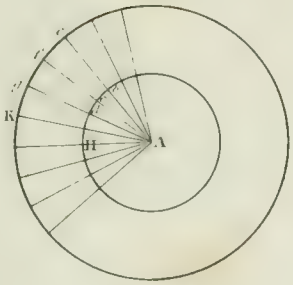
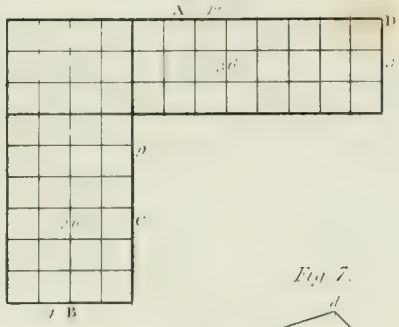


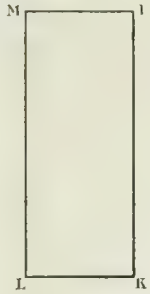
Fig. 2.

RECIPROCAL Figures.



RECTANGLE

Fig. 3.



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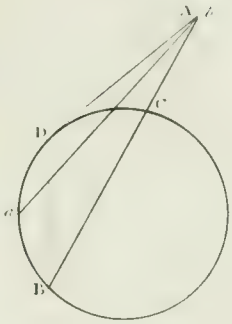
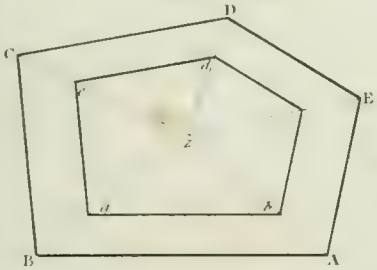


Fig. 5.

REDUCTION



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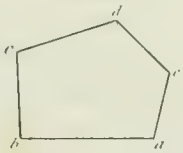
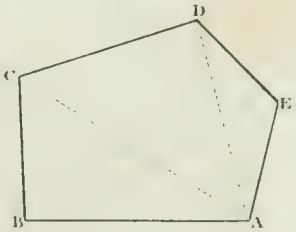


Fig. 6.



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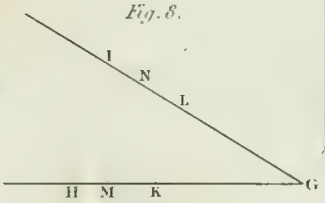
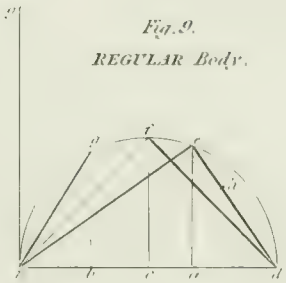
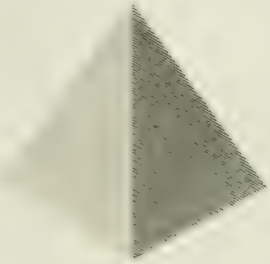


Fig. 9.

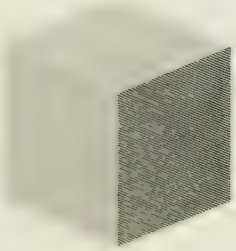
REGULAR Body.



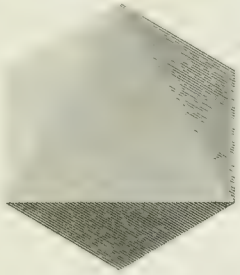
TETRAHEDRON



CUBE



OCTAHEDRON



RING

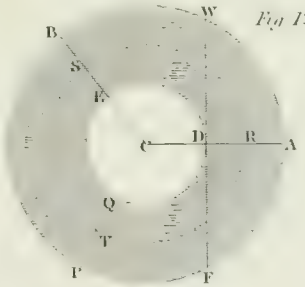


Fig. 12.

DODECAHEDRON

ICOSAHEDRON

RHOMBOIDES

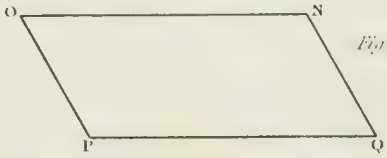


Fig. 10.

RHOMBUS

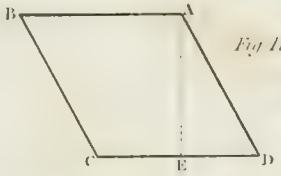


Fig. 11.

SIMILAR Curves

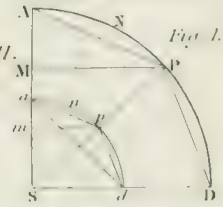


Fig. 13.

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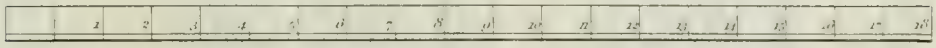
SCALE

Fig. 1.



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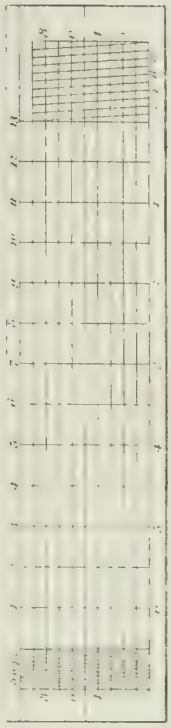
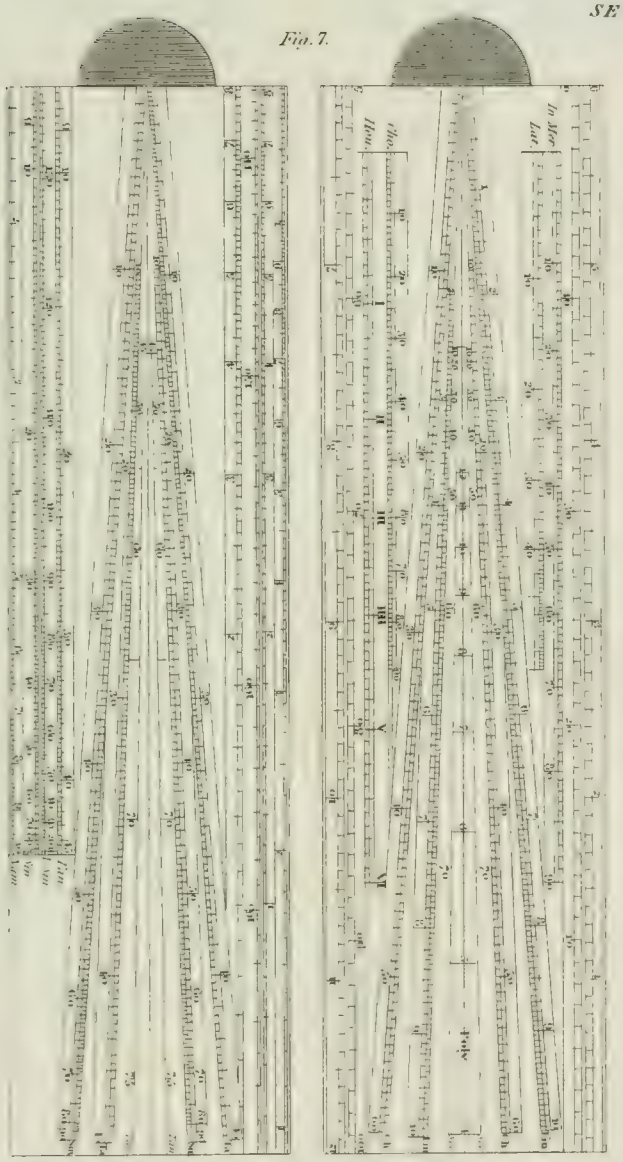


SECTOR

Fig. 7.



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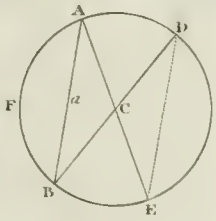

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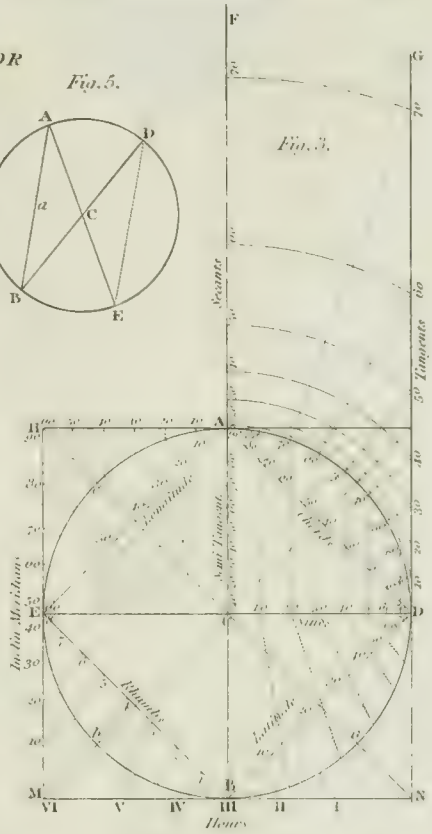

SECANT

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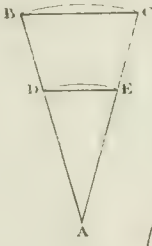

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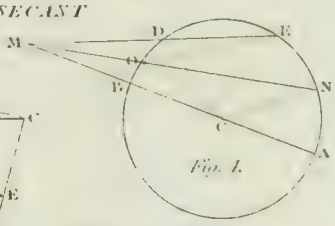

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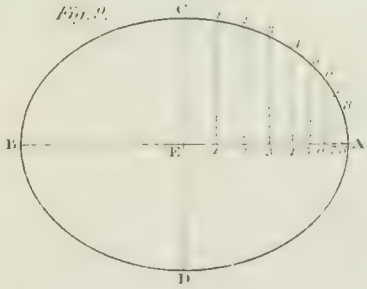

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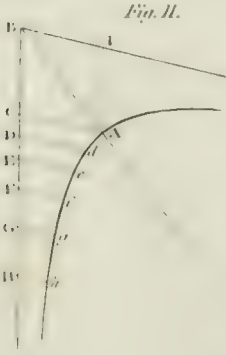

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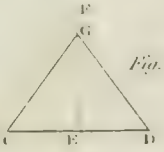

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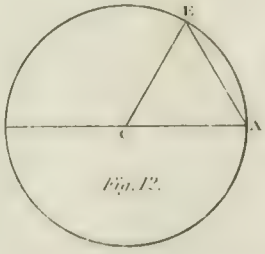


SEGMENT

Fig. 13.

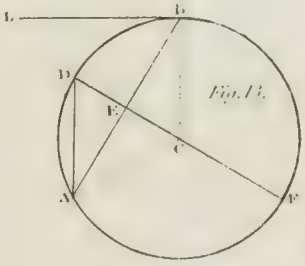
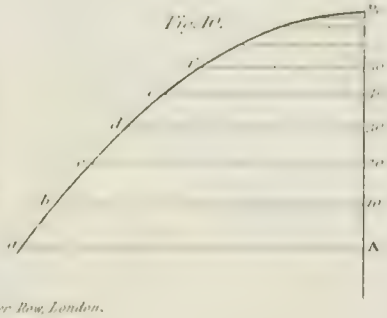


Fig. 10.



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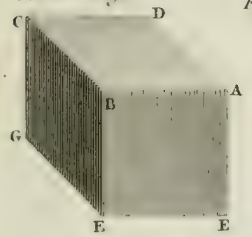
GEOMETRY.

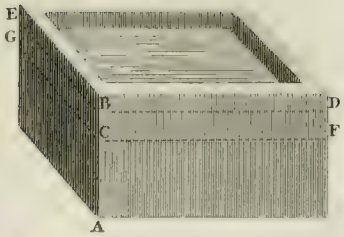
SOLID Angle

Fig. 1.



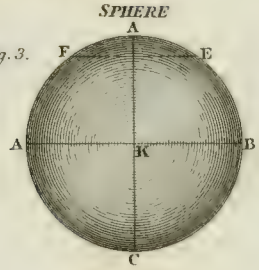
SOLIDITY

Fig. 2.



SPHERE

Fig. 3.



SPHEROID

Fig. 4.

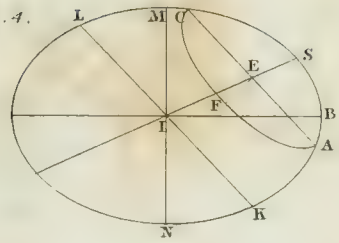
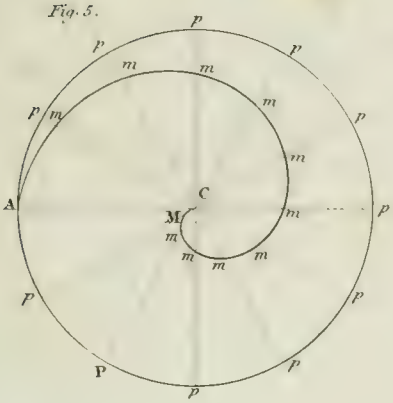


Fig. 5.



SPIRAL

Fig. 6.

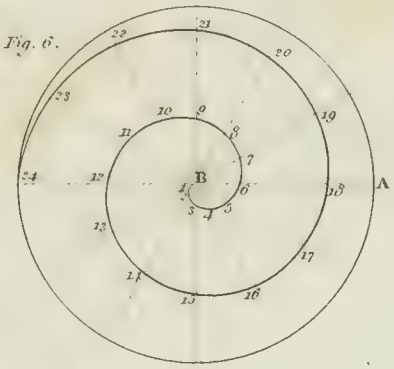


Fig. 7.

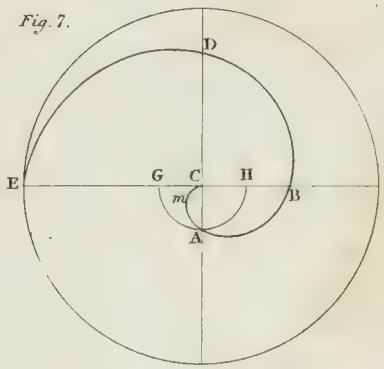


Fig. 9.

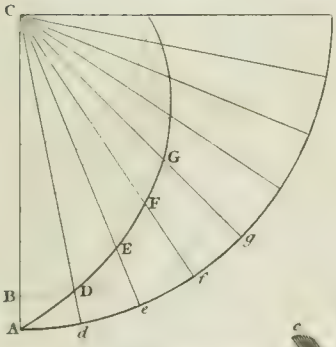


Fig. 10.

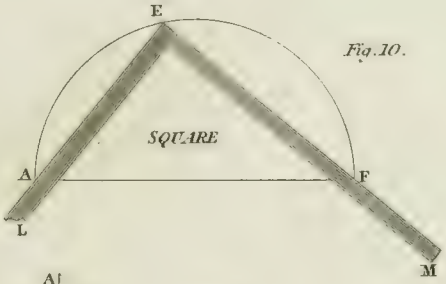
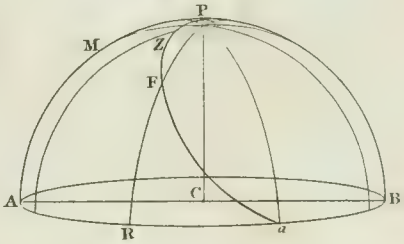


Fig. 8.



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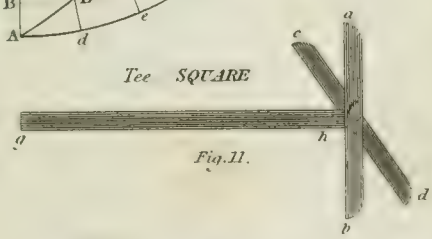
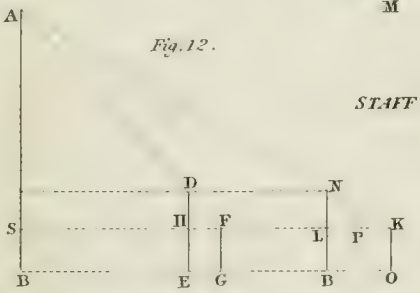


Fig. 11.

Fig. 12.



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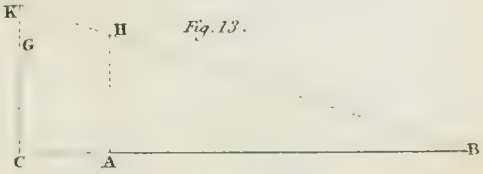
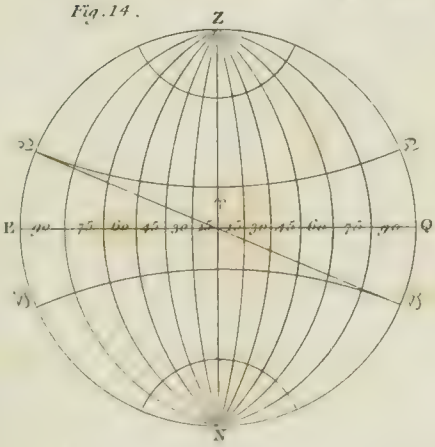


Fig. 13.

Fig. 14.



STEREOGRAPHIC Projection

Fig. 15.

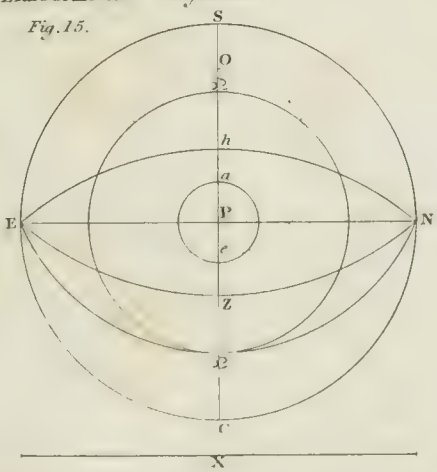
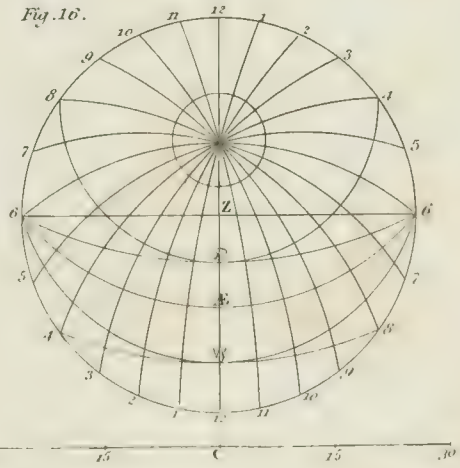


Fig. 16.



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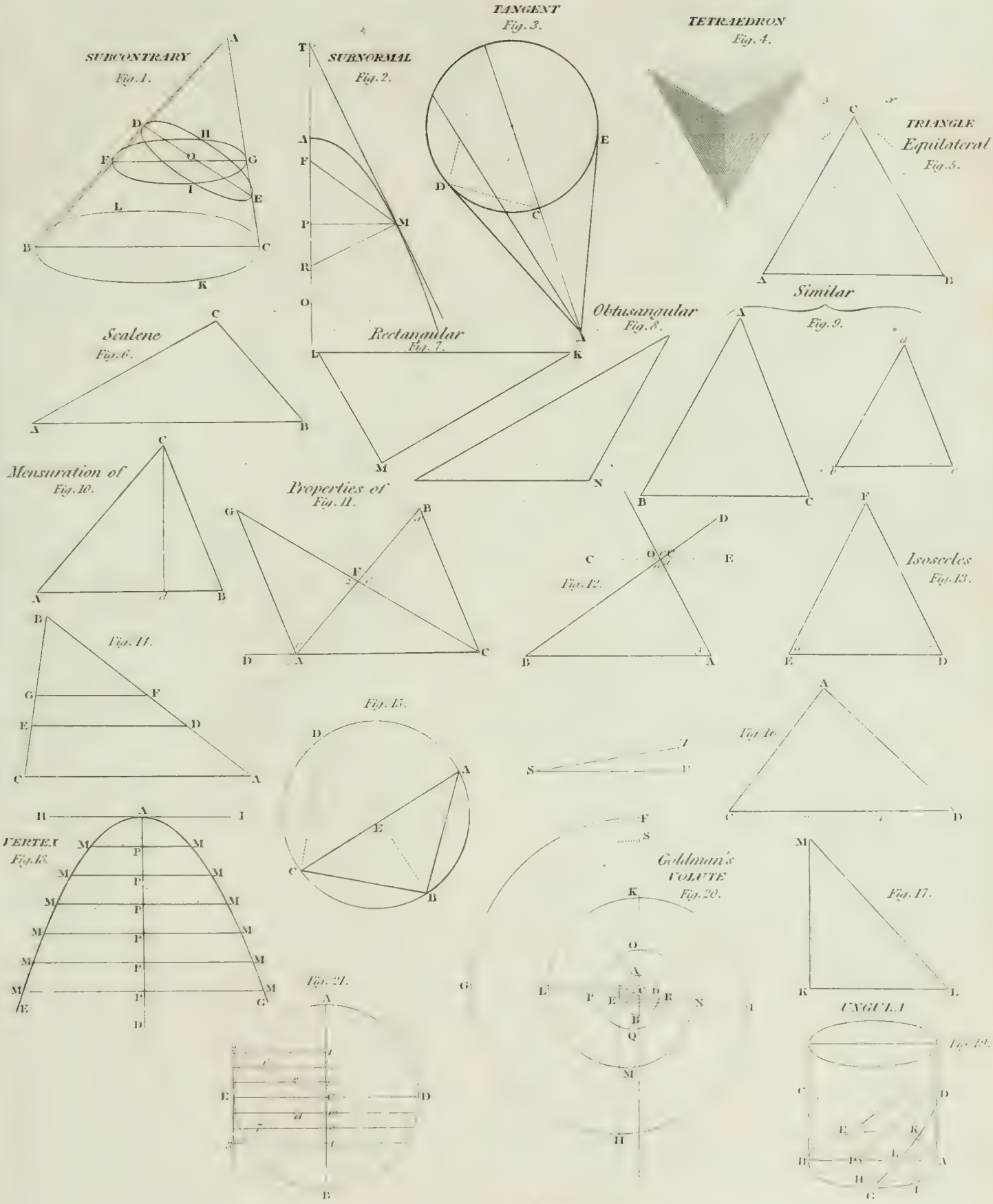

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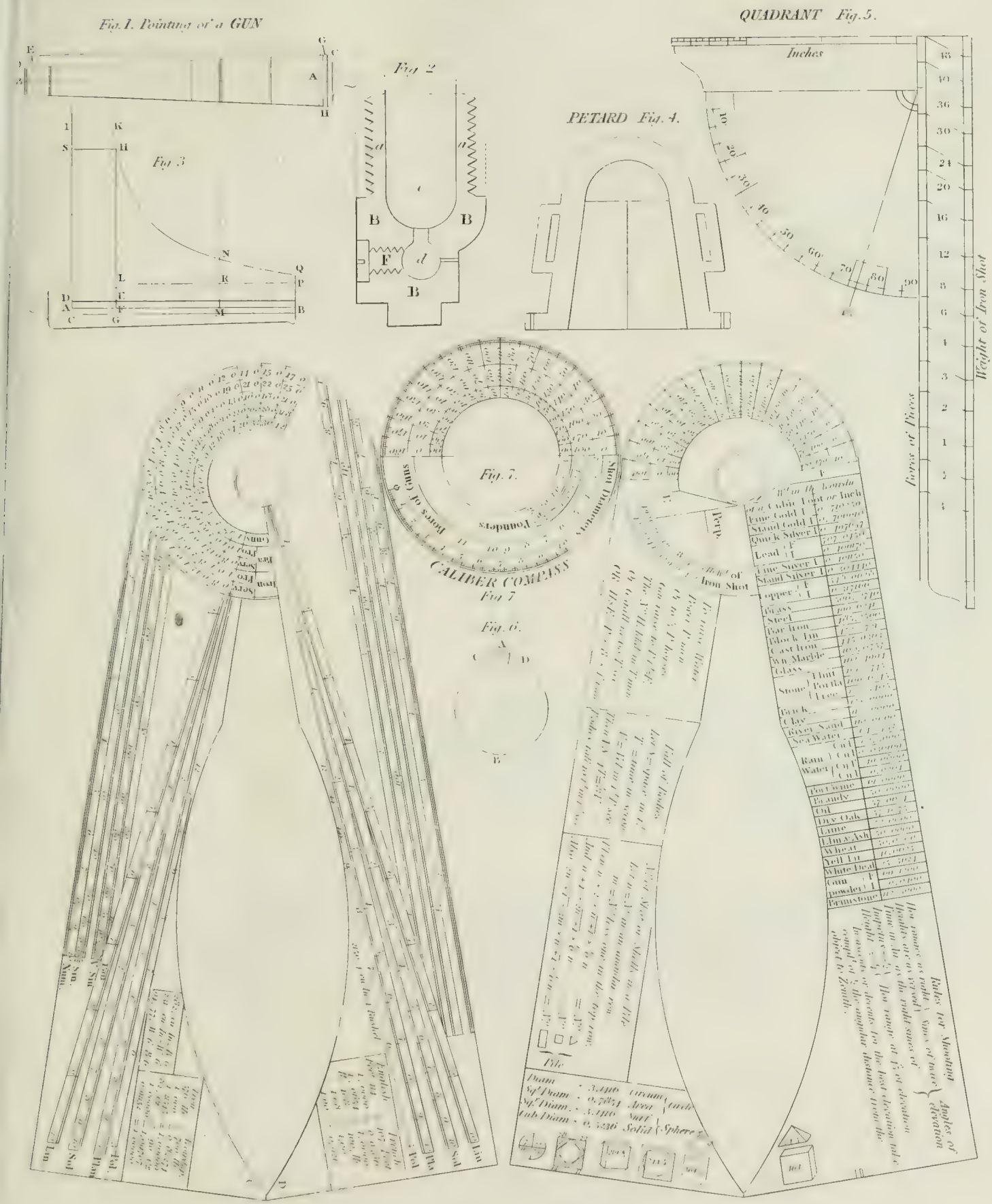
GUNNERY.

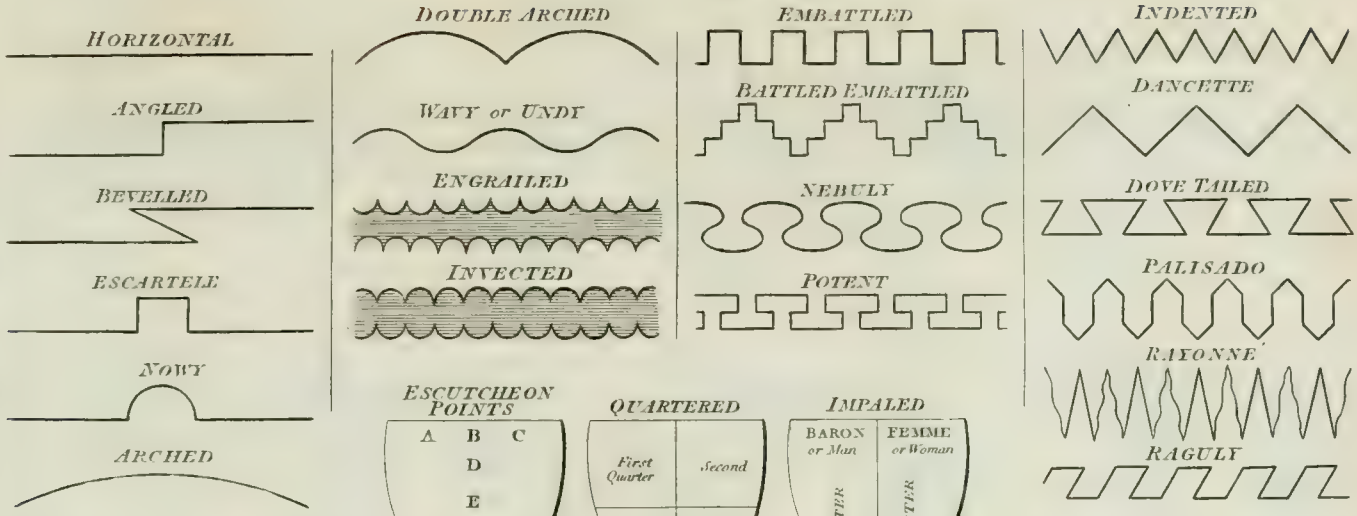


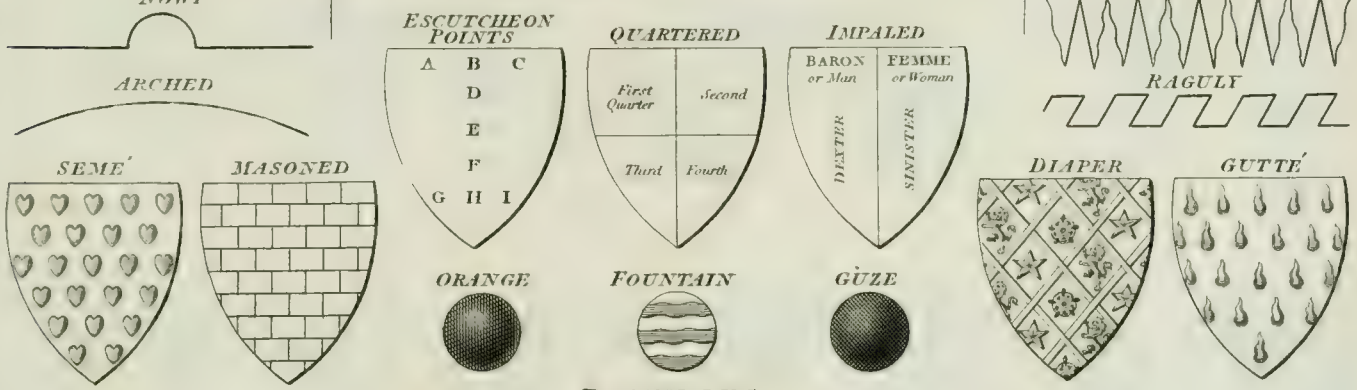
Published as the Act directs, 1818, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row

Lowry sculp

HERALDRY.

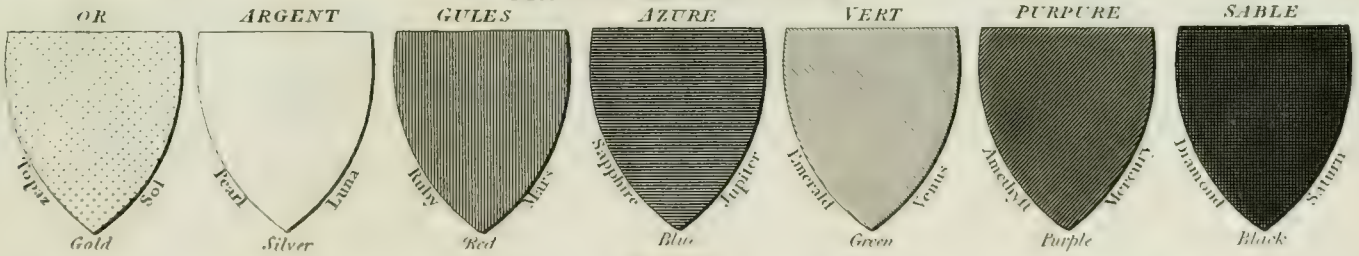
PARTITION LINES





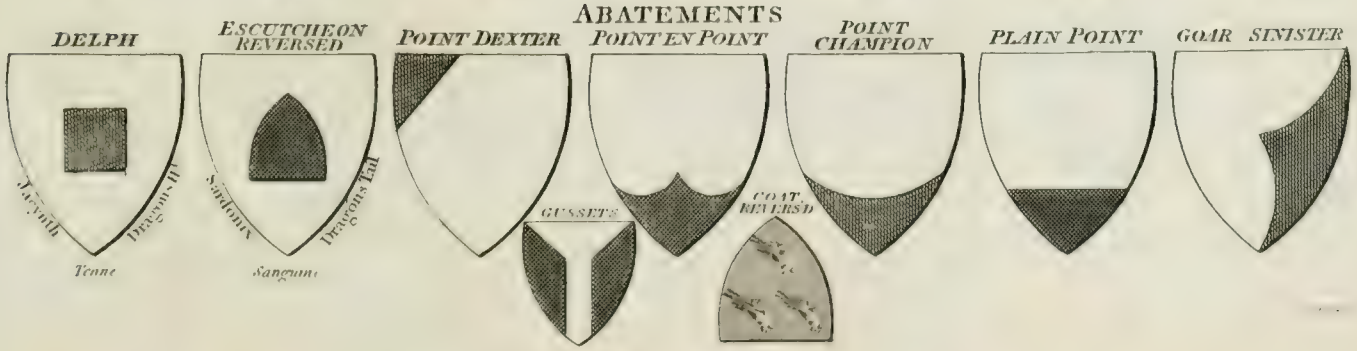
ROUNDLES

METALS and COLOURS



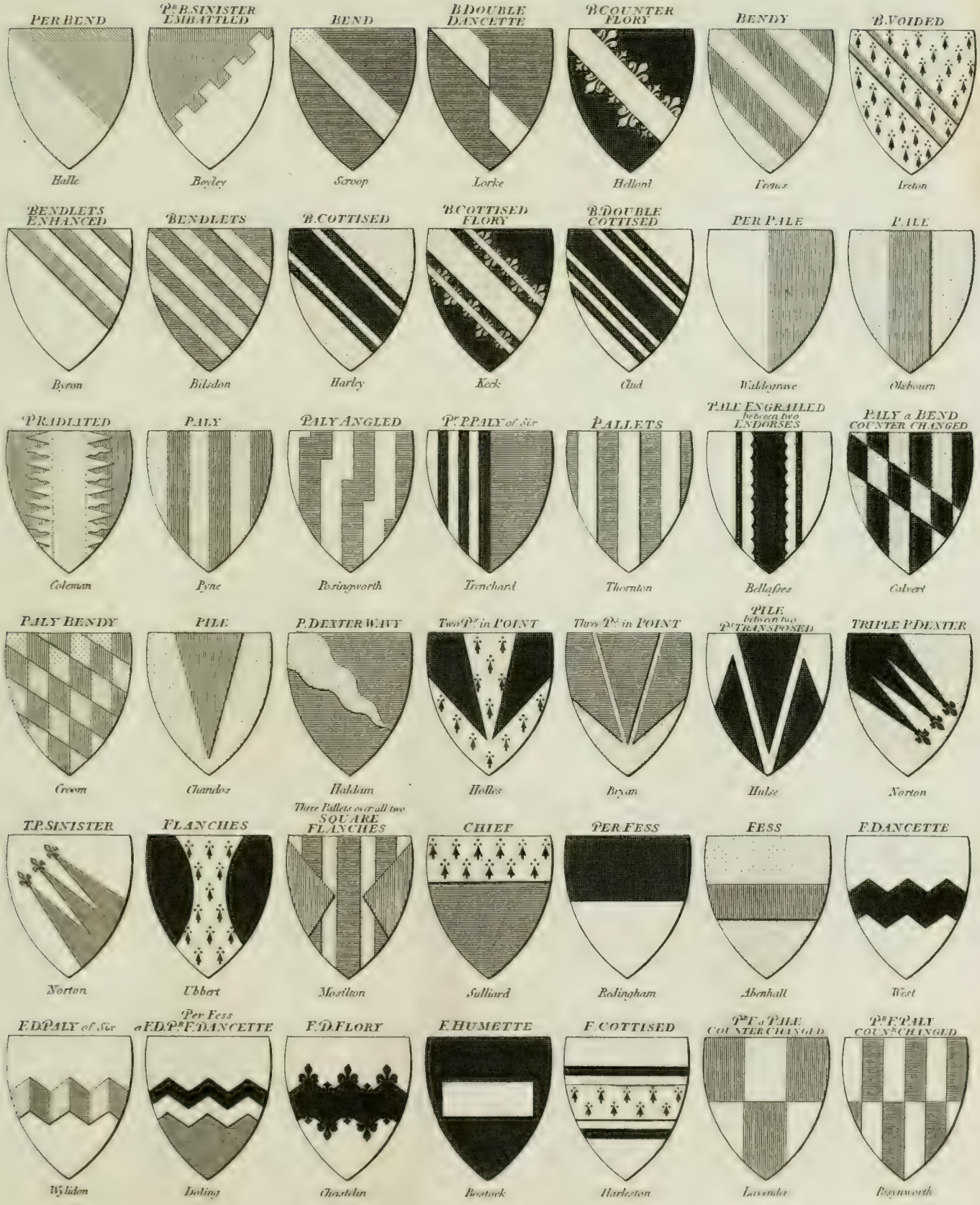
FURS

ABATEMENTS

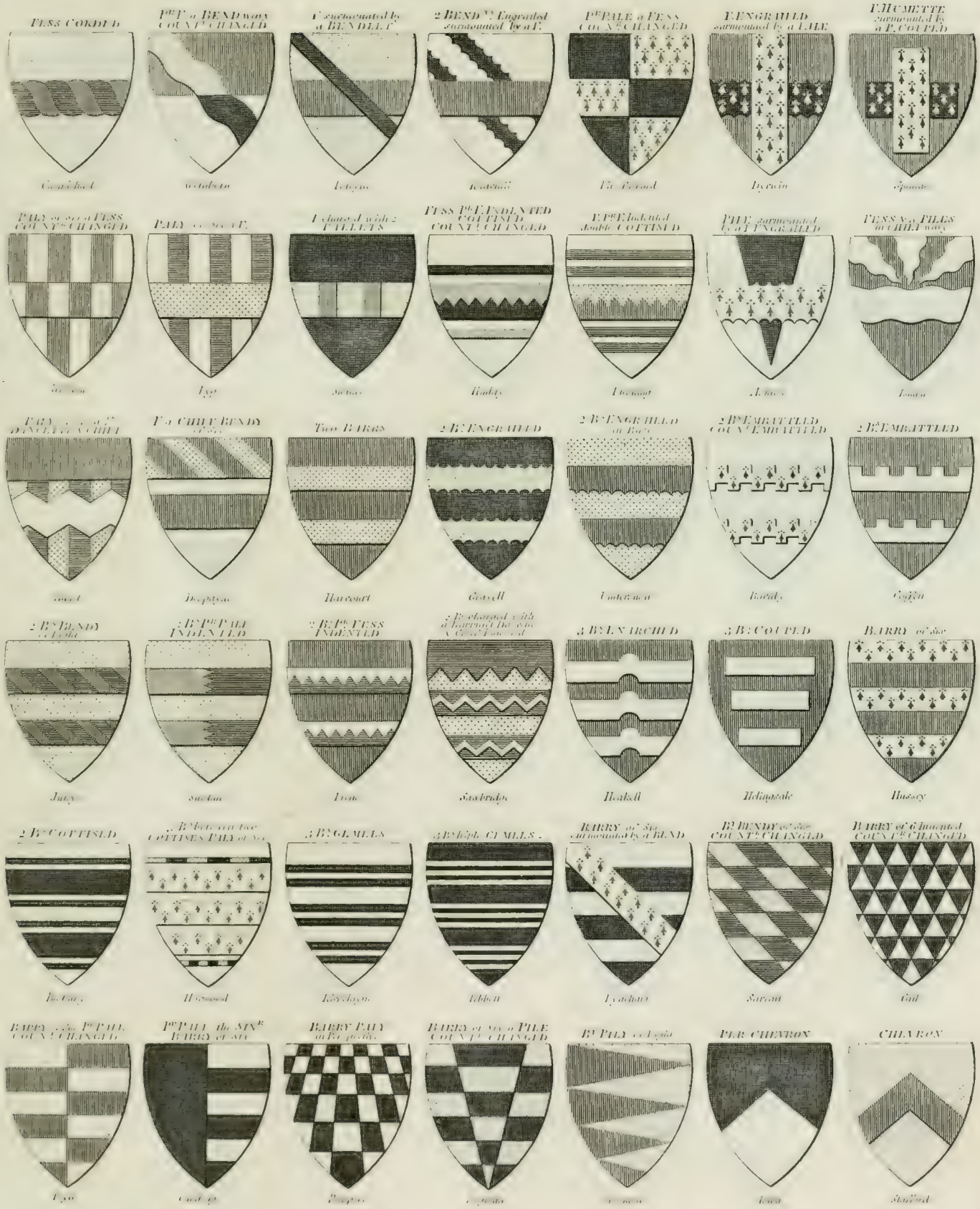


Published as the Act directs, May 1, 1800, by Longman & Rees, Paternoster Row.

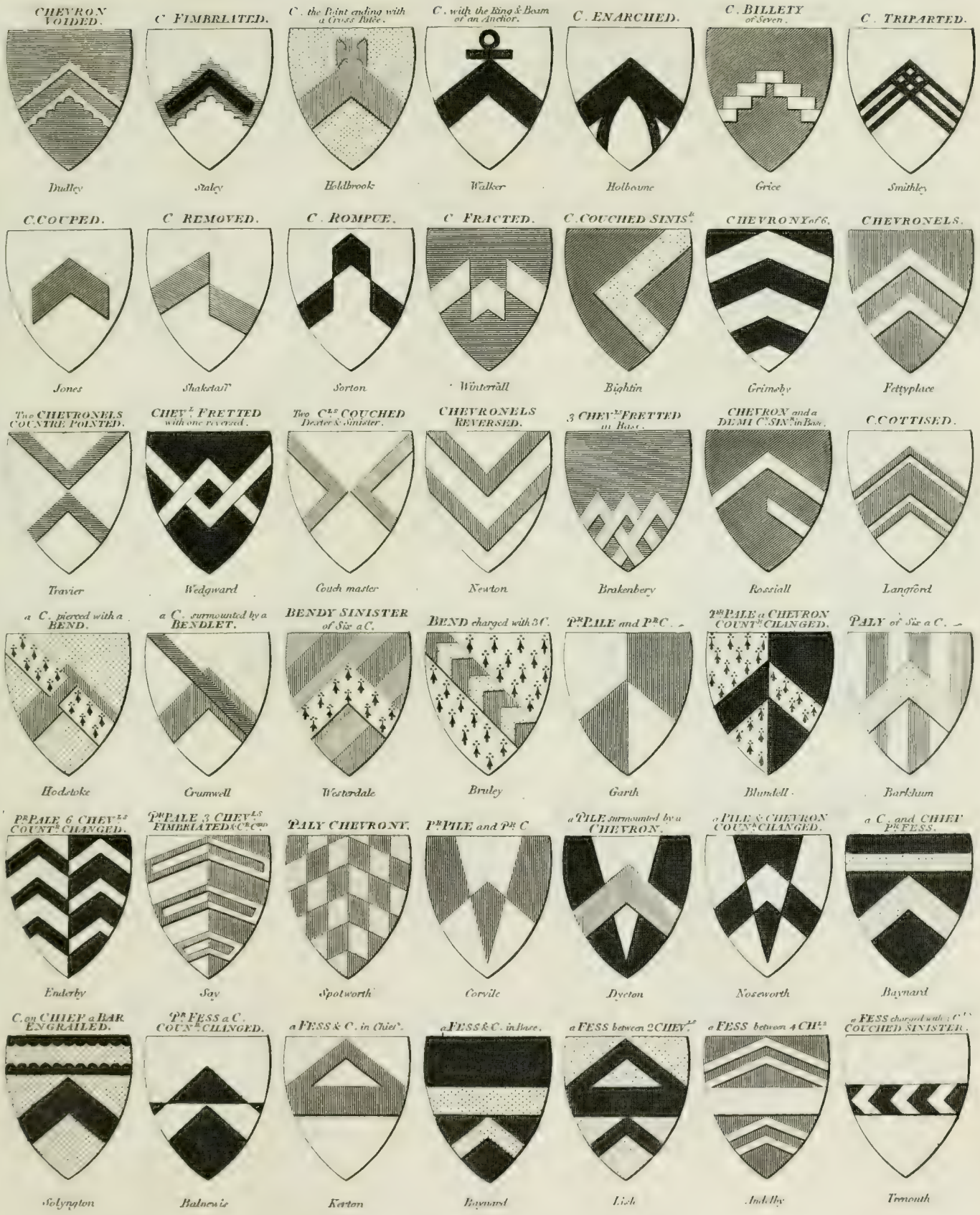
HERALDRY.



Published as the Act directs May 1.1802. by Longman & Rees Paternoster Row


FESS COUPED
PER T a BEND way COUNTER CHANGED
T surmounted by a BENDLET
2 BENDS Engrailed surmounted by a T.
PER PALE a FESS COUNTER CHANGED
T. ENGRAILED surmounted by a LAKE
T. HUMETTE surmounted by a P. COUPED
PALY of six a FESS COUNTER CHANGED
PALY of six a T.
T chaged with 2 FILLETS
FESS PER T INDENTED COTTISED COUNTER CHANGED
T PER T Indented double COTTISED
PILE surmounted by a T ENGRAILED
FESS between PILES in CHIEF way
PALY of six a CHIEF INDENTED
T a CHIEF BENDY of six
Two BARRS
2 BARS ENGRAILED
2 BARS ENGRAILED in Base
2 BARS EMBATTLED COUNTER EMBATTLED
2 BARS EMBATTLED
2 BARS BENDY a Chief
2 BARS PER PALE INDENTED
2 BARS PER FESS INDENTED
2 Bars charged with a Barrulet the other Charged with
3 BARS NIRCHED
3 BARS COUPED
BARRY of six
2 BARS COTTISED
2 Bars between two COTTISES PALY of six
3 BARS GEMELS
3 Bars Gemels
BARRY of six surmounted by a BEND
BARRY BENDY of six COUNTER CHANGED
BARRY of 6 Indented COUNTER CHANGED
BARRY of six PER PALE COUNTER CHANGED
PER PALE the MINOR BARRY of six
BARRY PALY in Perspective
BARRY of six a PILE COUNTER CHANGED
BARRY PILY of eight
PER CHEVRON
CHEVRON

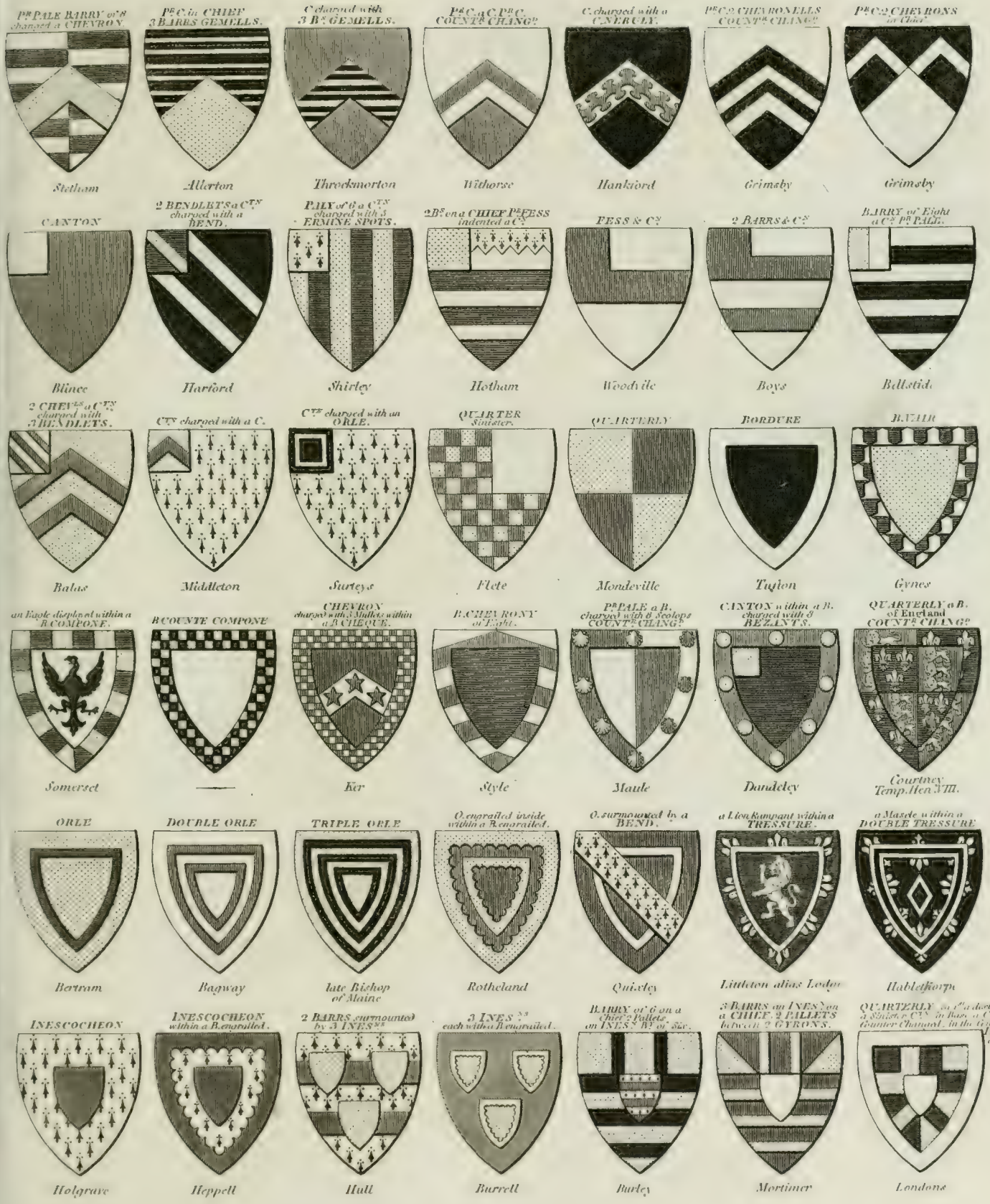
HERALDRY.



Published as the Act directs, June 1.1803, by Longman & Rees Paternoster Row.

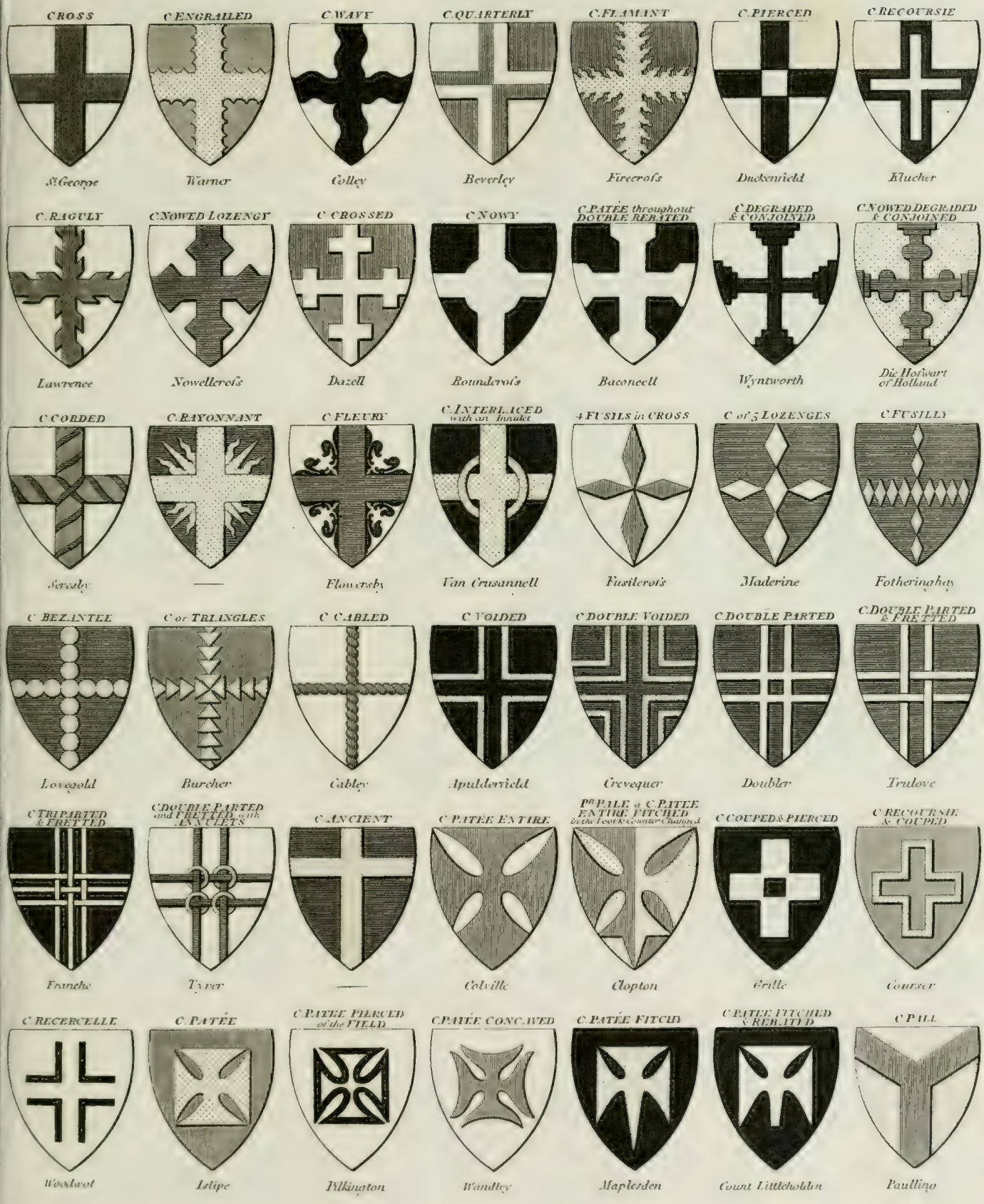
Milton

HERALDRY.



Published as the Act directs, Sep. 1st 1808 by Longman, Hurst, Rees & Orme, Paternoster Row

Wilson sc.

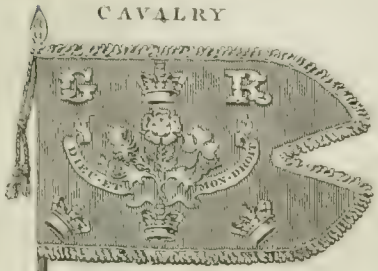


Published as the Act directs, Sep.t 1.st 1808 by Longman Hurst Rees & Orme Paternoster Row

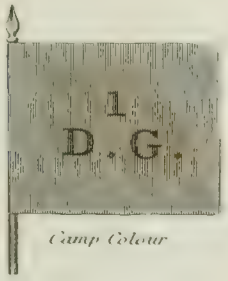
MILITARY AND NAVAL FLAGS, STANDARDS &c.

CAVALRY

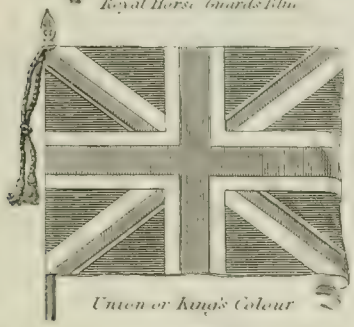
Standard of the Royal Horse Guards Blue



Guidon of the Royal Horse Guards Blue



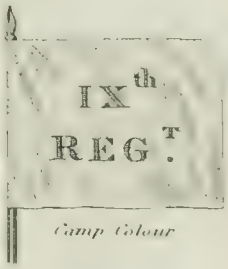
Camp Colour



Union or King's Colour

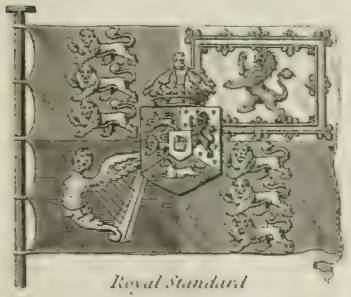
INFANTRY

Regimental Colour

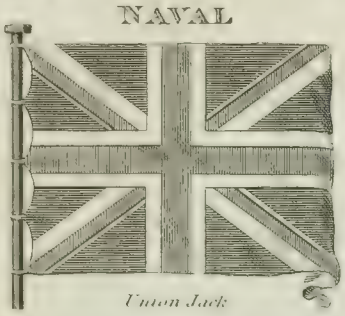


Camp Colour

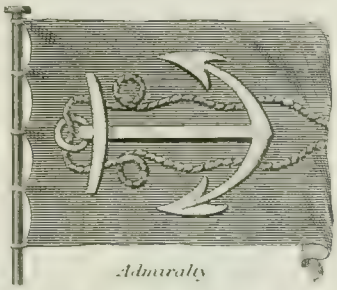
NAVAL



Royal Standard

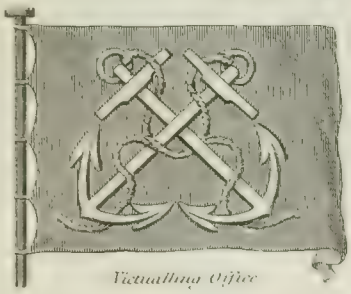


Union Jack

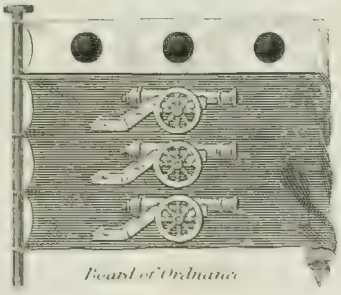


Admiralty

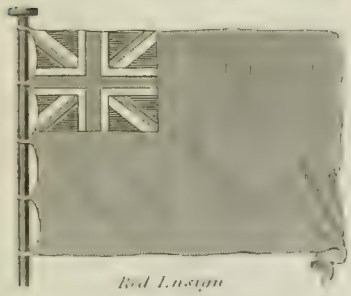
Navy Office



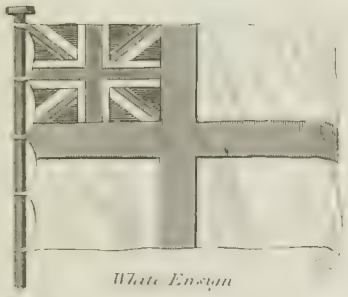
Victualling Office



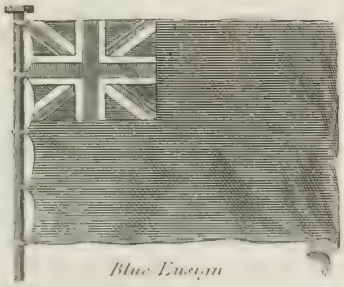
Board of Ordnance



Red Ensign

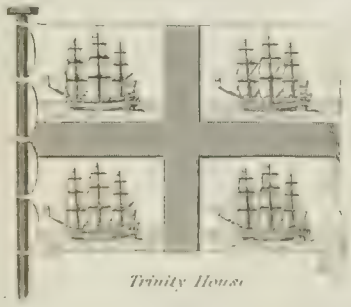


White Ensign

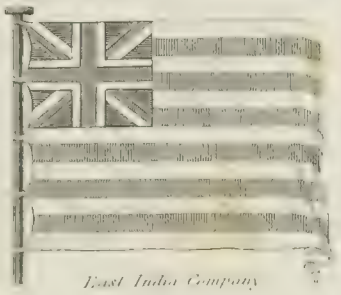


Blue Ensign

Custom House



Trinity House



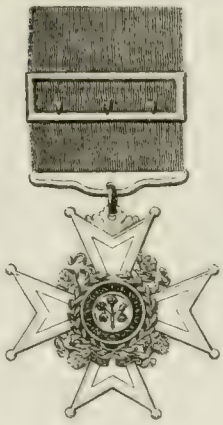
East India Company

Published as the Act directs April 1.1819. by Longman, Hurst Rees Orme & Brown Paternoster Row.

HERALDRY.

ORDERS of KNIGHTHOOD.

Star Collar and Badge of the Order of the GARTER

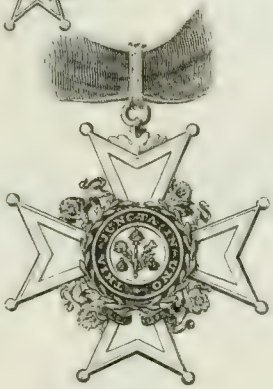


Badge of a Companion of the Order of the BATH

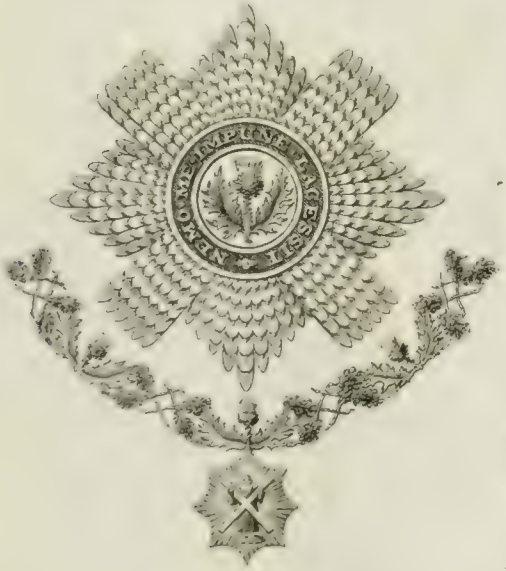
Star Collar and Badge of a Military Knight Grand Cross of the Order of the BATH

Badge of a Military Commander of the Royal Hanoverian Guelphic Order

Star Collar and Badge of a Military Knight Grand Cross of the Royal Hanoverian Guelphic Order



Badge of a Knight Commander of the Order of the BATH.



Star Collar and Badge of the Order of the THISTLE.

Badge of a Military Knight of the Royal Hanoverian Guelphic Order.

Star Collar and Badge of the Order of ST PATRICK

Milton sculp.

Published as the Act directs August 1.1819 by Longman, Hurst, Rees, Orme & Brown Paternoster Row

HERALDRY.

ORDERS OF KNIGHTHOOD.

Star Collar & Badge of a Civil Knight Grand Cross of the Order of the BATH.

Star Collar & Badge of a Civil Knight Grand Cross of the Royal Hanov.r GUELPHIC Order.

Star of a Civil Commander of the Royal Hanoverian GUELPHIC Order

Ribband & Badge of a Civil Commander of the Royal Hanov.r GUELPHIC Order

Reverse of the Ribband & Badge of the Royal Hanover GUELPHIC Order.

Badge of a Civil Knight of the Royal Hanov.r GUELPHIC Order

Star of a Knight Commander of the Order of the BATH.

Star of a Military Commander of the Royal Hanover.n GUELPHIC Order

Published as the Act directs Oct.r 1.1820 by Longman Hurst Rees Orme & Brown Paternoster Row

HERALDRY.

CROWNS, CORONETS AND MITRES

PLATE

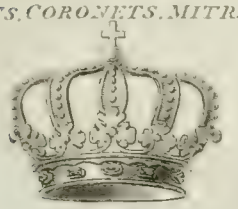
Published as the Act directs Aug.st 1 1819, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row

Milton sculp

CROWNS, CORONETS, MITRES, &c.

Comte of France

Prussia


Spain

Sweden

Vicomte of France

Duke of Spain

Sicily

Portugal

Netherlands

Denmark

Wurttemburg

Bavaria

Grand Signior

Papal Tiara

Persia

Saxony

Sardinia

Haiti

Cardinals Hat

Grand Duke of Hesse

Poland

Grand Duke of Saxe Weimar

Landgrave of Hesse

Imperial Crown worn by Napoleon Buonaparte

Italy

Doge of Venice

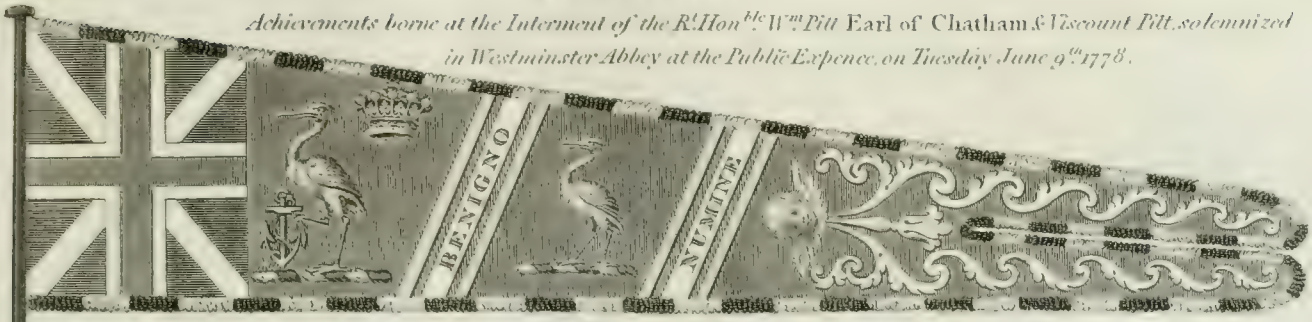
Grand Duke of Tuscany

Lord Mayor of London

Published as the Act directs Jan. 1st 1820 by Longman Hurst Rees. Orme & Brown Paternoster Row

Milton sculp

Achievements borne at the Interment of the Rt. Hon.ble Wm. Pitt Earl of Chatham & *Viscount Pitt, solemnized in Westminster Abbey at the Public Expence, on Tuesday June 9th 1778.*

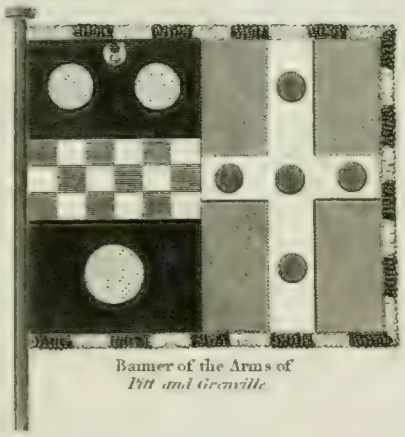


The Standard

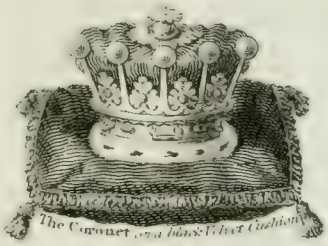
The Banner of the *Barony of Chatham*

Targe & Sword

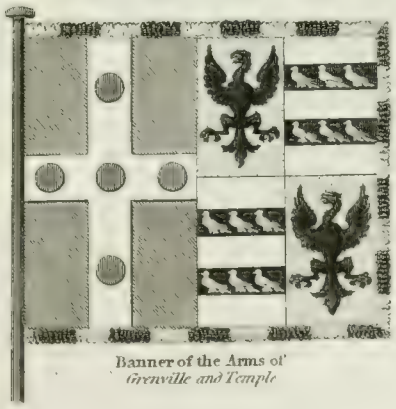
The Great Banner.



Banner of the Arms of *Pitt and Grenville*



The Coronet *on a black Velvet Cushion*

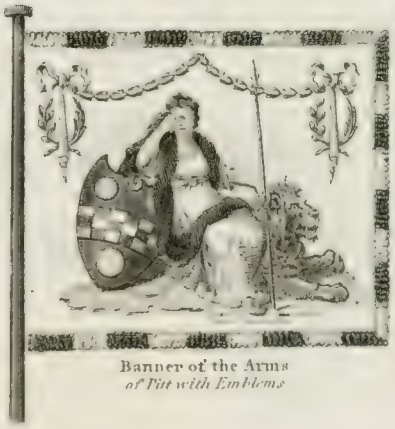


Banner of the Arms of *Grenville and Temple*

Helmet & Crest

Banner of the Crest *of Pitt with Emblems.*

Surcoat



Banner of the Arms *of Pitt with Emblems*

Published as the Act directs April 1st 1780 by Longman Hurst Rees Orme & Brown Paternoster Row

HERALDRY.

Funeral Achievements

Bachelor

Lamb

Peer

Earl of Waldegrave KG
Wife surviving

Spinster

Egerton

Husband

Beaumont & Evelyn
Wife surviving

Arch Bishop

Lord Rokeby
ARCH BISHOP of ARMAGH

Wife

Beaumont & Evelyn
Husband surviving

Husband & Wife

James & Aucher
both dead

Bishop

Harley
BISHOP of HEREFORD
& Vaughan his Wife surviving

Widow

Raper & Porter

Published as the Act directs Dec 1 1818 by Longman Hurst Rees Orme & Brown Paternoster Row.

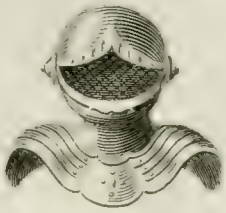
Milton sculp

HERALDRY.

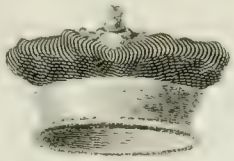
Heraldic Crowns Coronets and Helmets.

Nobility

King of Arms



Baronet & Knight



Ancient Barons Cap
worn previous to 1661.

Esquire

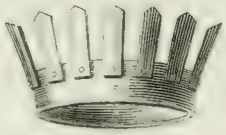
Helmet Creft *and* Mantling *or* Lambrequin
of the
BRITISH SOVEREIGN.

Ducal

Mural

Naval

Vallarie



Palisado
or Castrensial.

Civic

Lattern

Chapeau
or Cap of Maintenance.

Celestial

Chaplet
or Garland

Wreath

Laureate

Obsidional

Olive

Trigonal

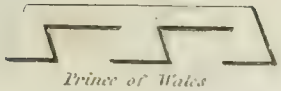
Published as the Act directs Mar.1 1809, by Longman & Rees Paternoster Row

Milton fc

HERALDRY

PLATE XII

ROYAL DISTINCTIONS


Prince of Wales

Duke of York

Duke of Clarence

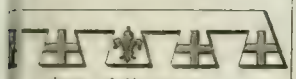
Duke of Kent

Duke of Cumberland

Duke of Sussex

Duke of Cambridge

DISTINCTIONS OF HOUSES


Duke of Gloucester

Princess Mary

Princess Royal Charlotte Augusta Matilda

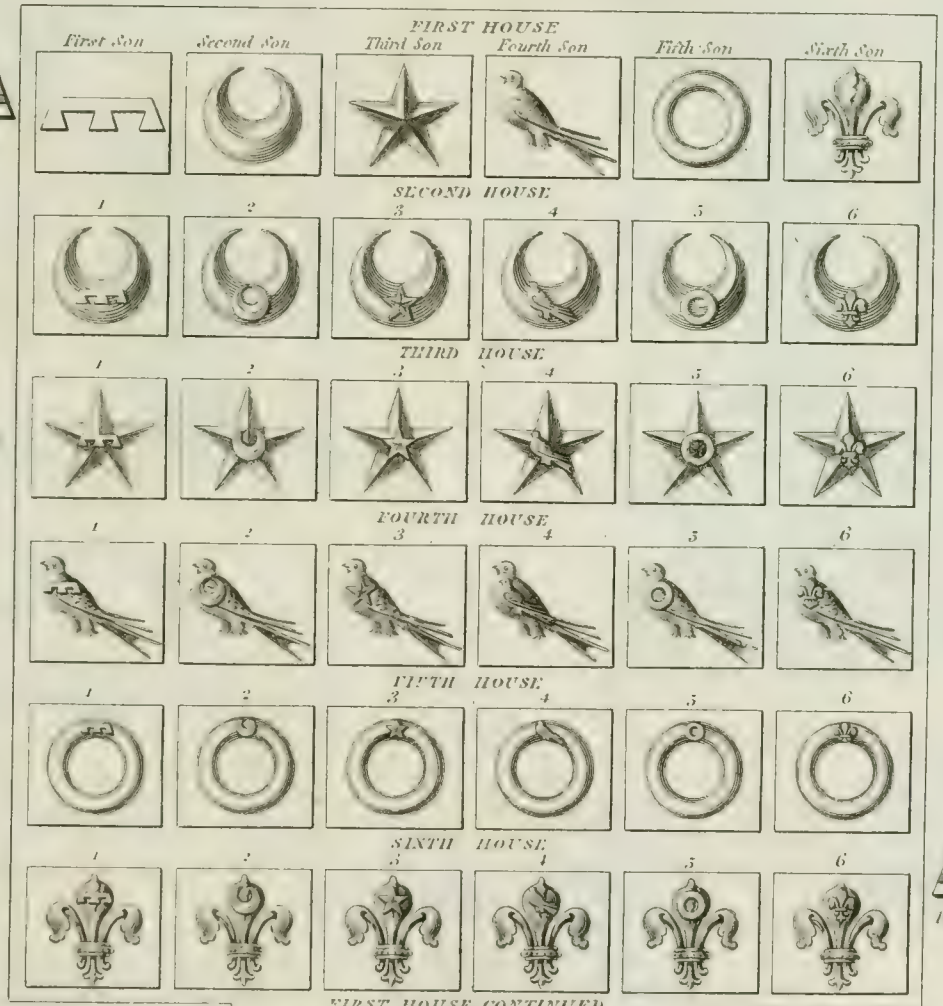
Princess Sophia

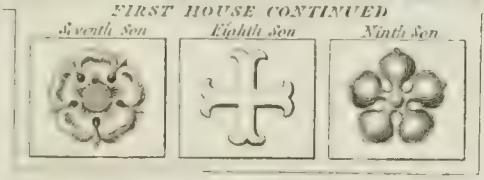
Princess Augusta Sophia

Princess Amelia

Princess Elizabeth

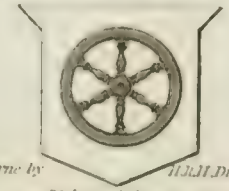
Princess Sophia Matilda of [illegible]





Badge of Baronets of England & Ireland.

Badge of Baronets of Nova Scotia.


Badge borne by H.R.H. Duke of York as Bishop of Osnaburgh.

Milton fecit.

Published as the Act directs, June 1st 1809, by Longman Hurst Rees & Orme Paternoster Row.

ANCIENT CLEPSYDRÆ.

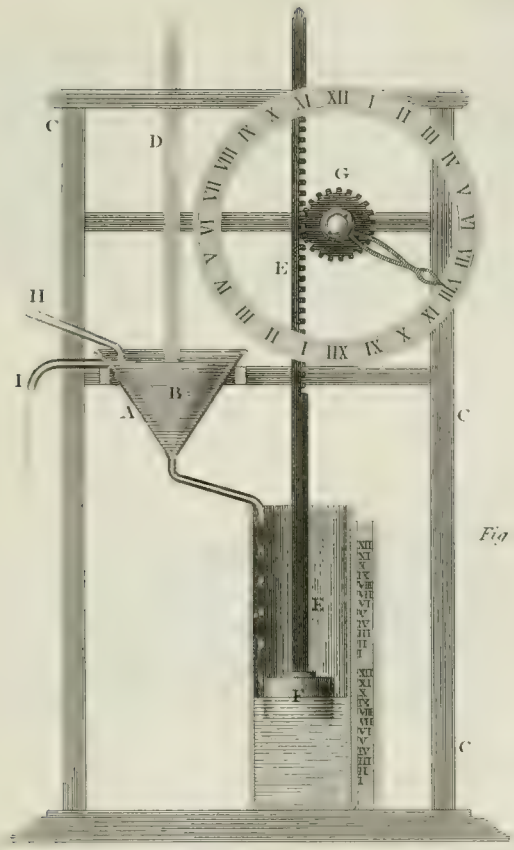


Fig 1.

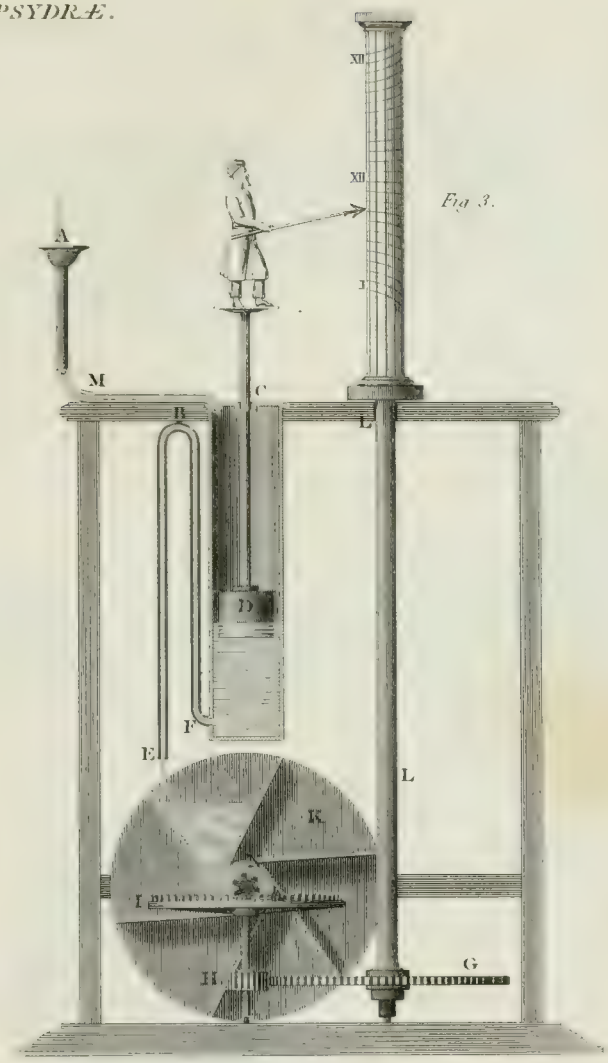


Fig 3.

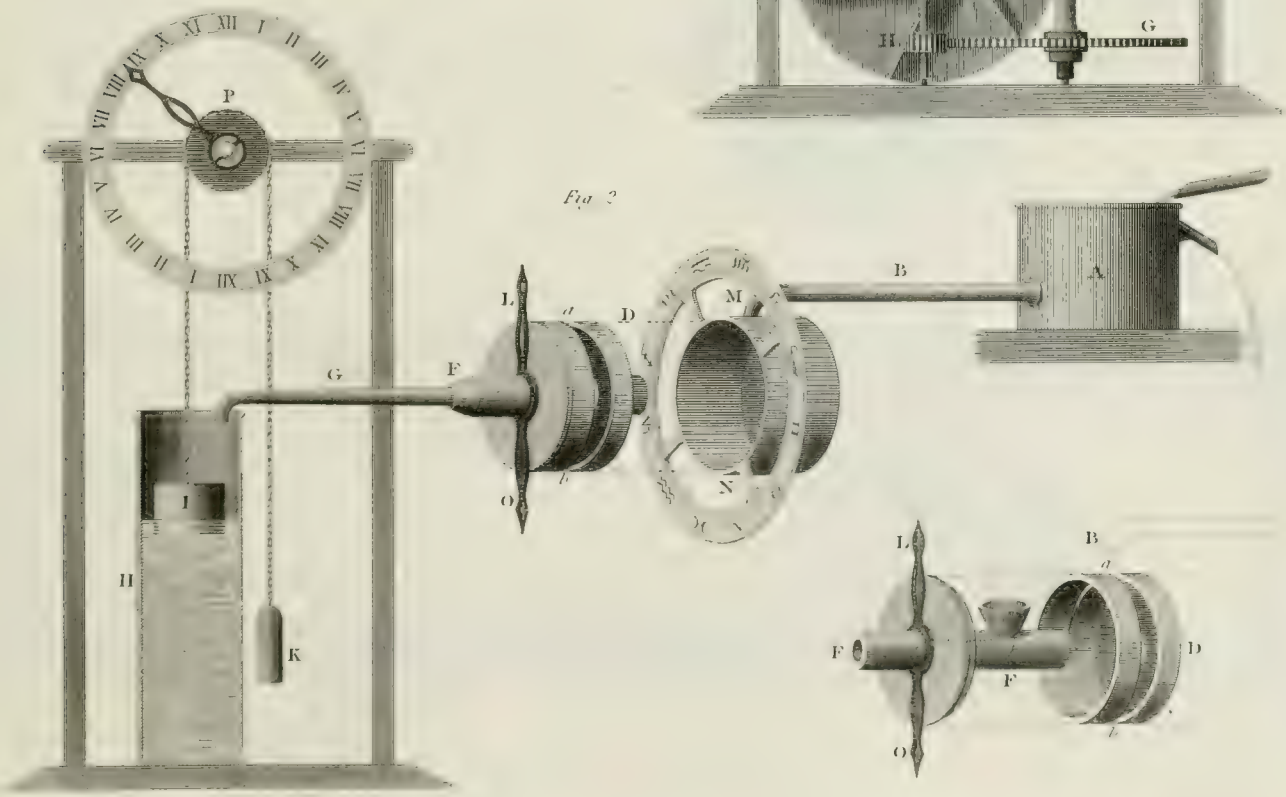
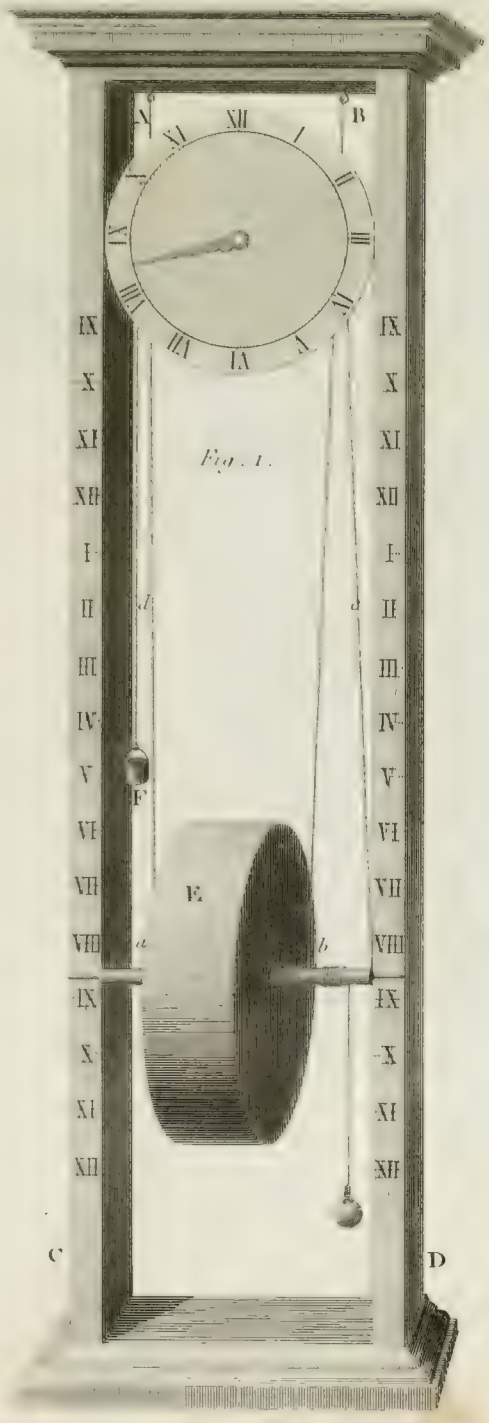


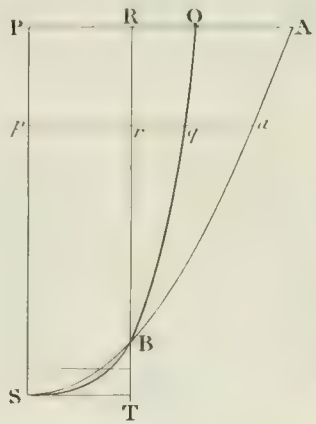
Fig 2

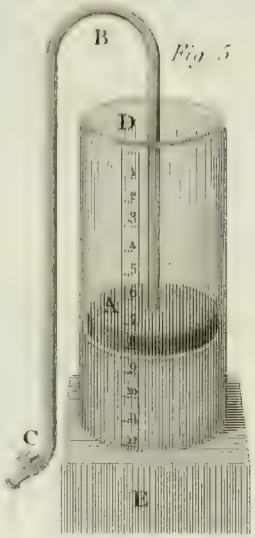
Published by the Architect, 1871, Longmans Hurst Rees Orme & Brown, Paternoster Row

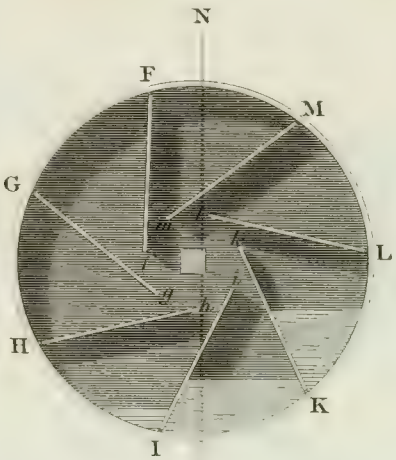
HOROLOGY.

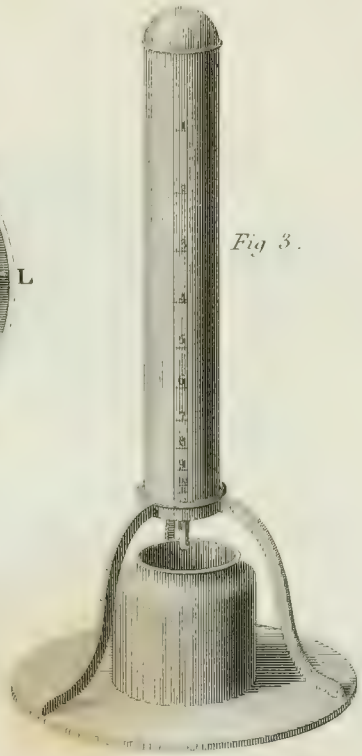
MODERN CLEPSYDRÆ.

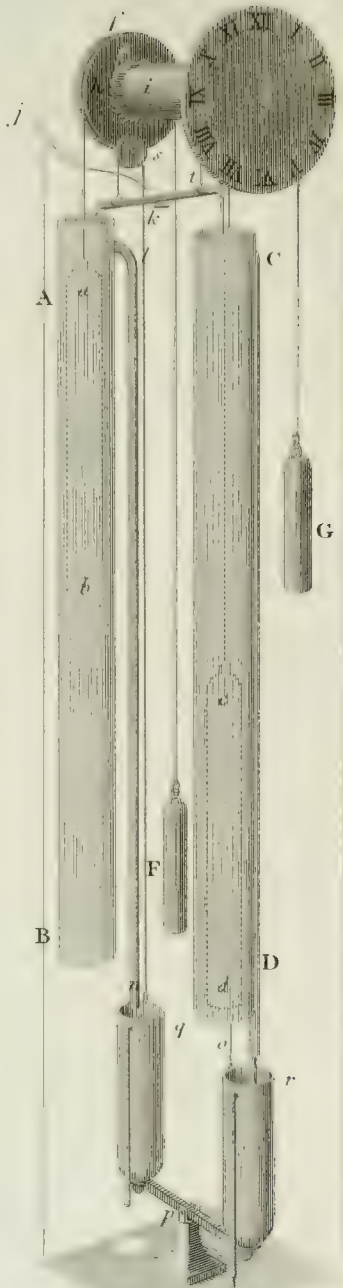










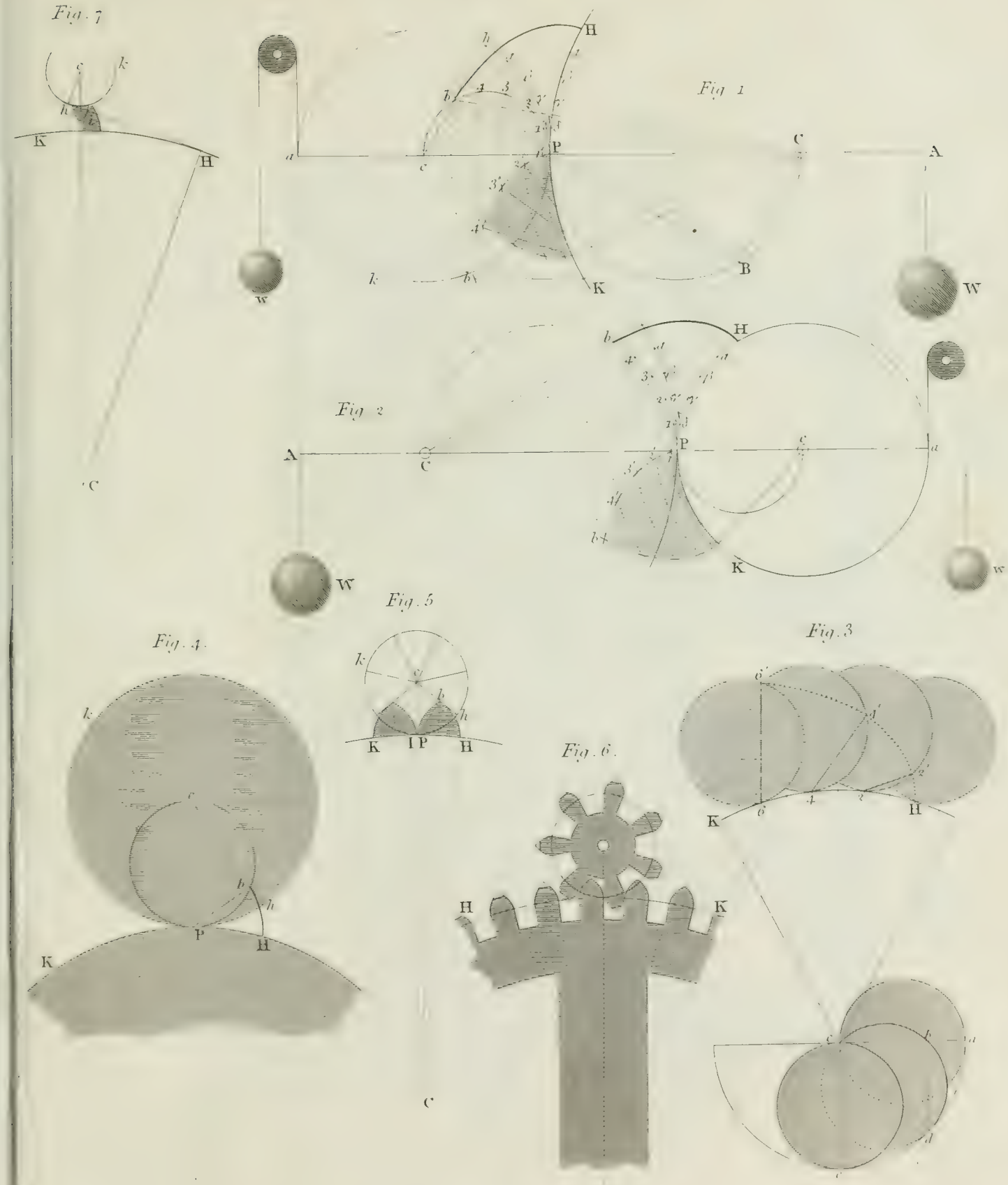


Published as the Act directs, March 1, 1806, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

HOROLOGY.

CLOCK-MOVEMENT.

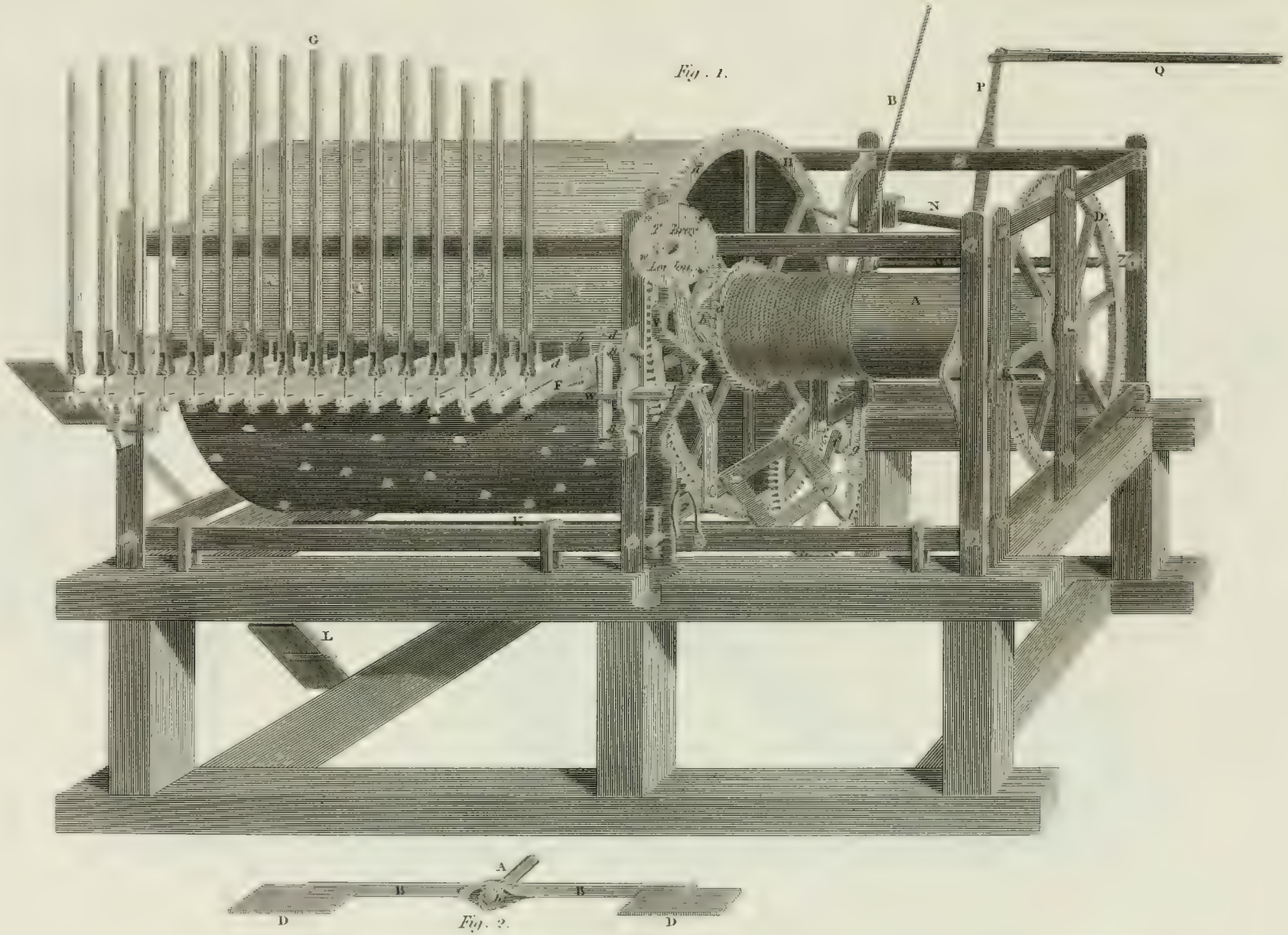


Published as the Act directs, June 2d 1806, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Chime Work in the Clock Room

of St. Margaret's Church, Westminster.



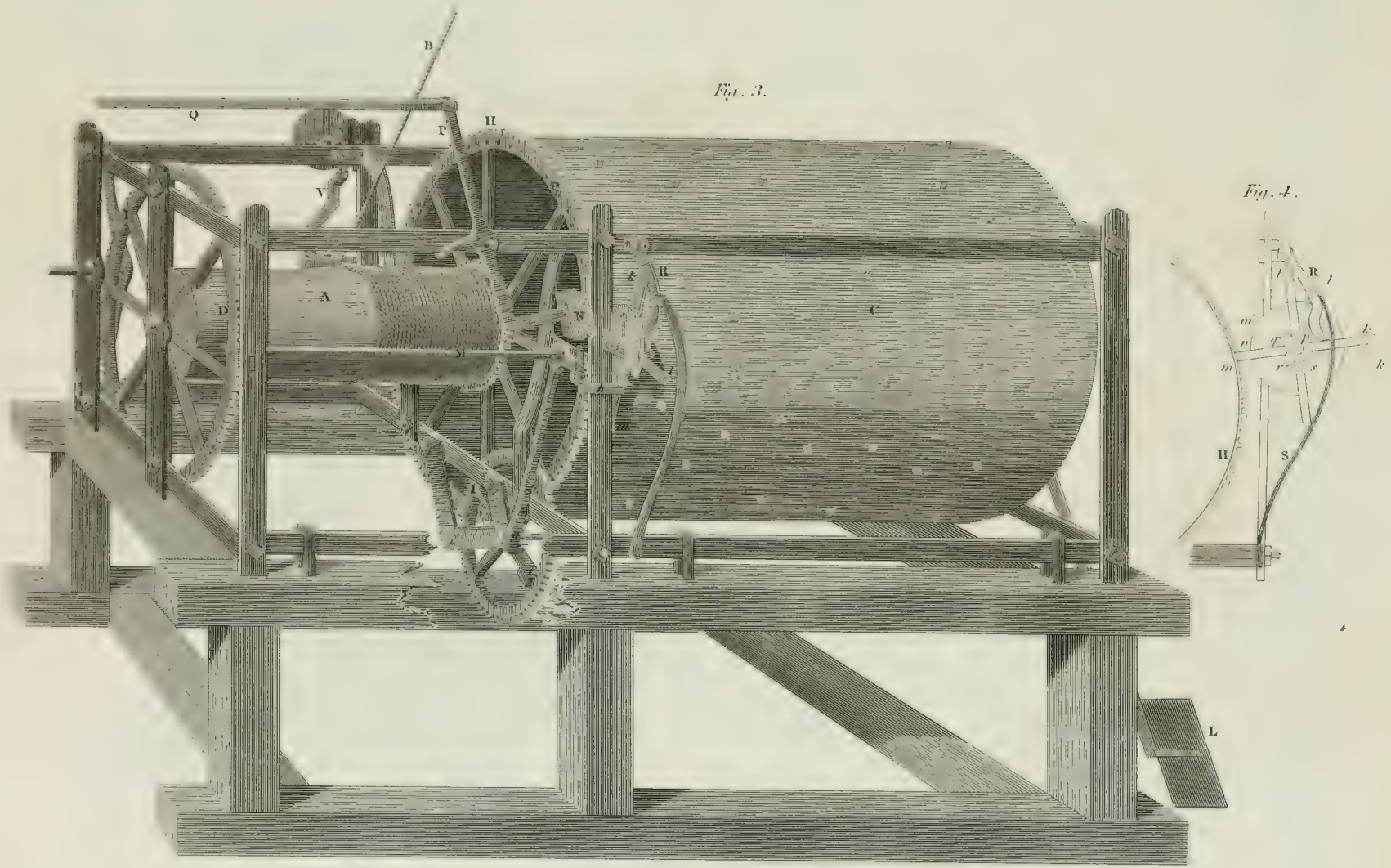
J. Farey Junr. delin.

Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Chime Work in the Clock Room

of St. Margarets Church, Westminster.



J. Farey Junr. delin.

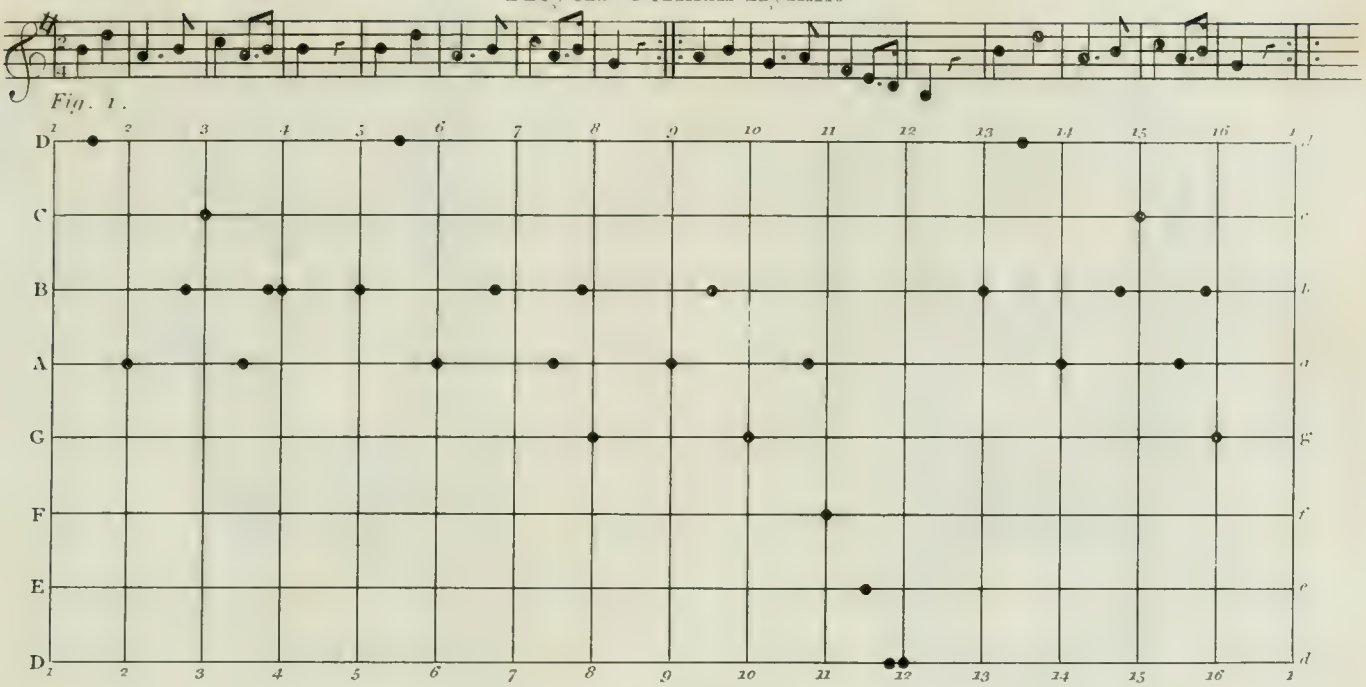
Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

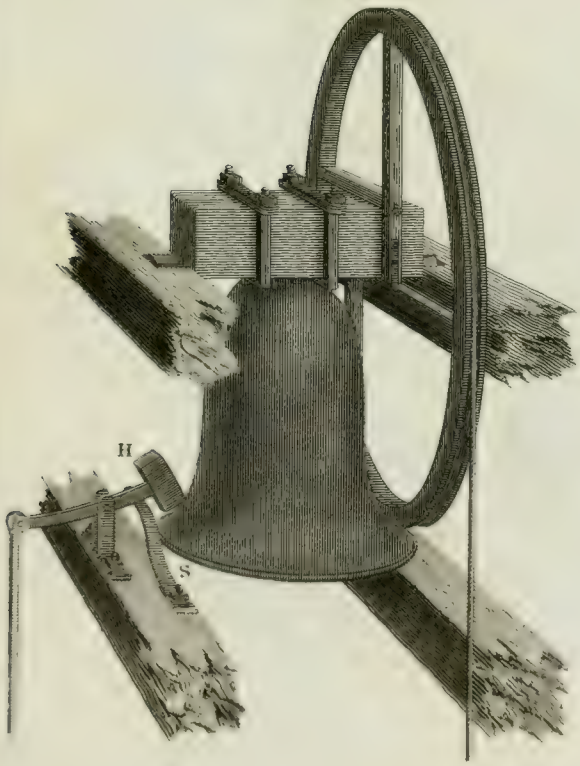
Engraved by Wilson Lowry.

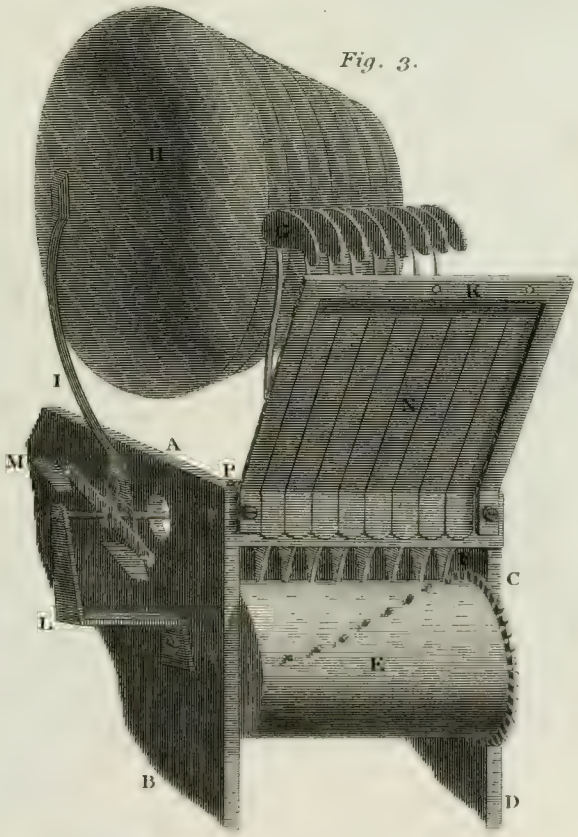
HOROLOGY.

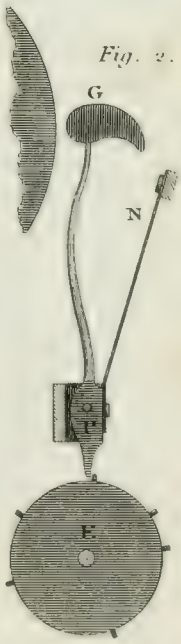
CHIMES.

Pleyel's German Hymn.









Published as the Act directs, April 1, 1807; by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry

ANCIENT CLOCK BY HENRY DE WICK, IN 1370.

Fig. 1.

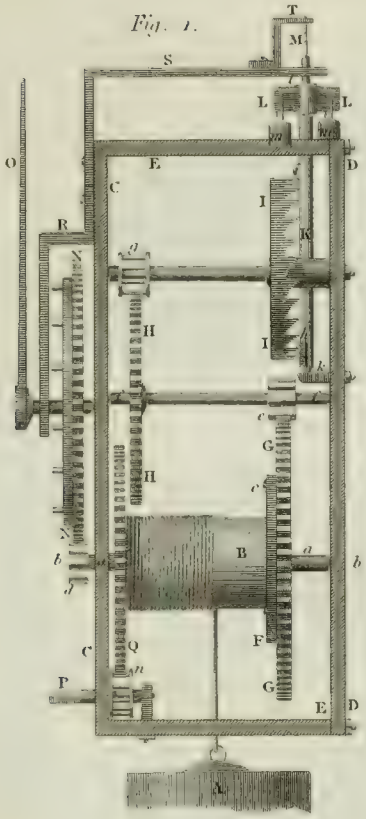


Fig. 3.

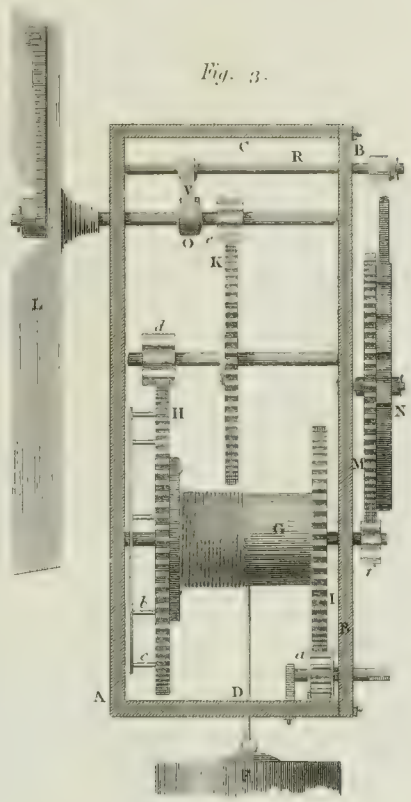


Fig. 2.

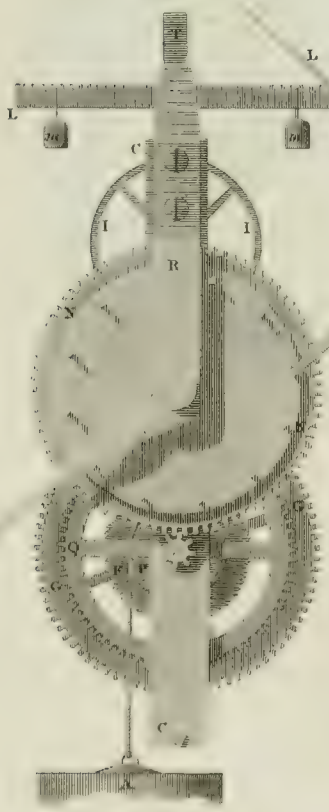


Fig. 4.

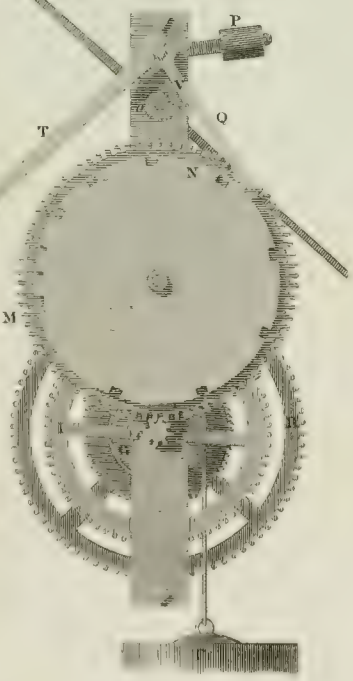
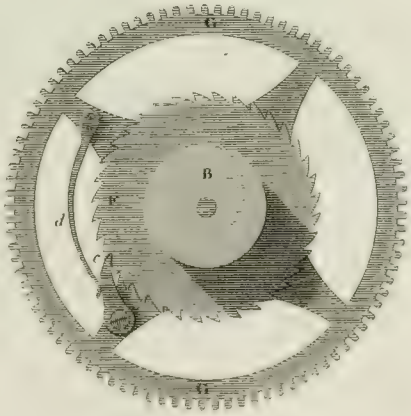


Fig. 5.



Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

A Thirty hours Clock with Alarum and Count Wheel Striking Work.

Fig. 1.

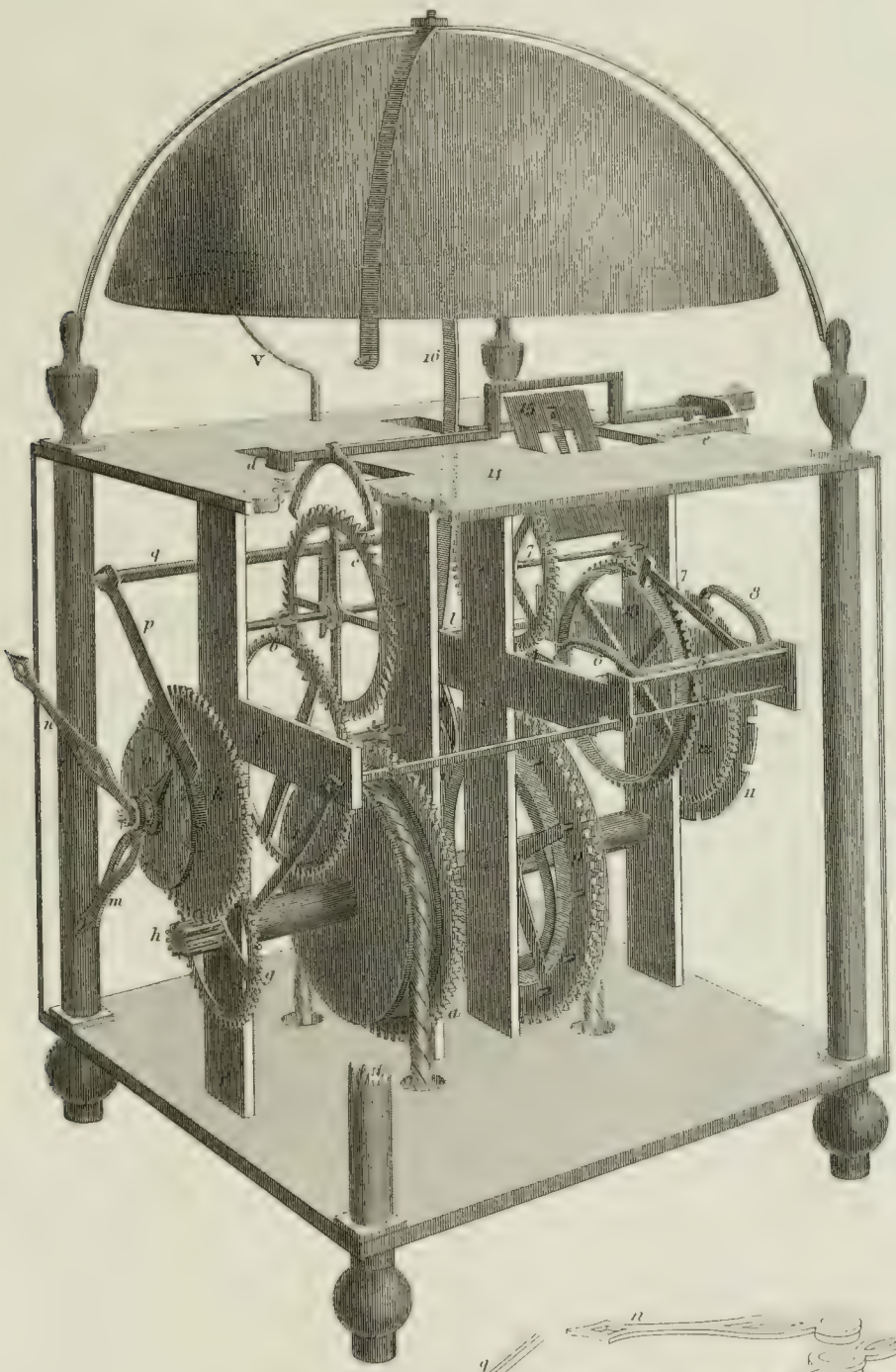


Fig. 3.

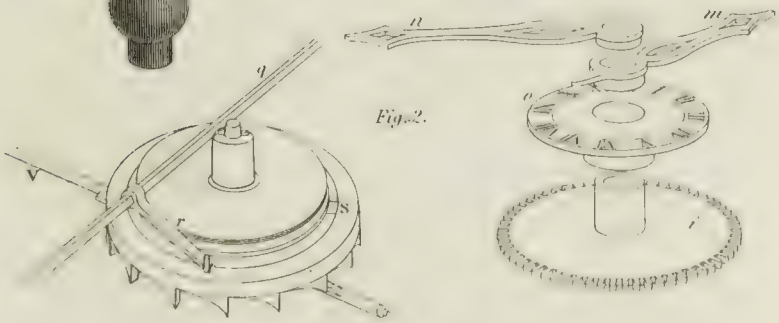


Fig. 2.

T. Farey Jun. del. Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row, London.

CALLIPERING.

(ART. CLOCK)

Fig. 1.

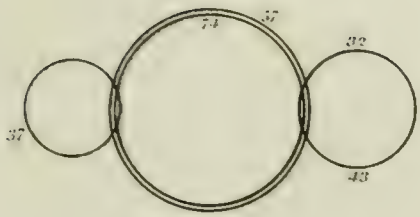


Fig. 2.

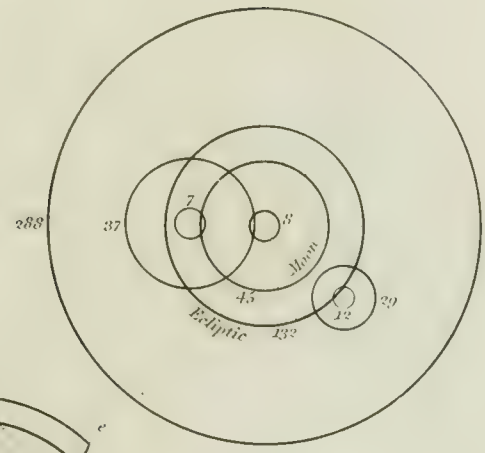
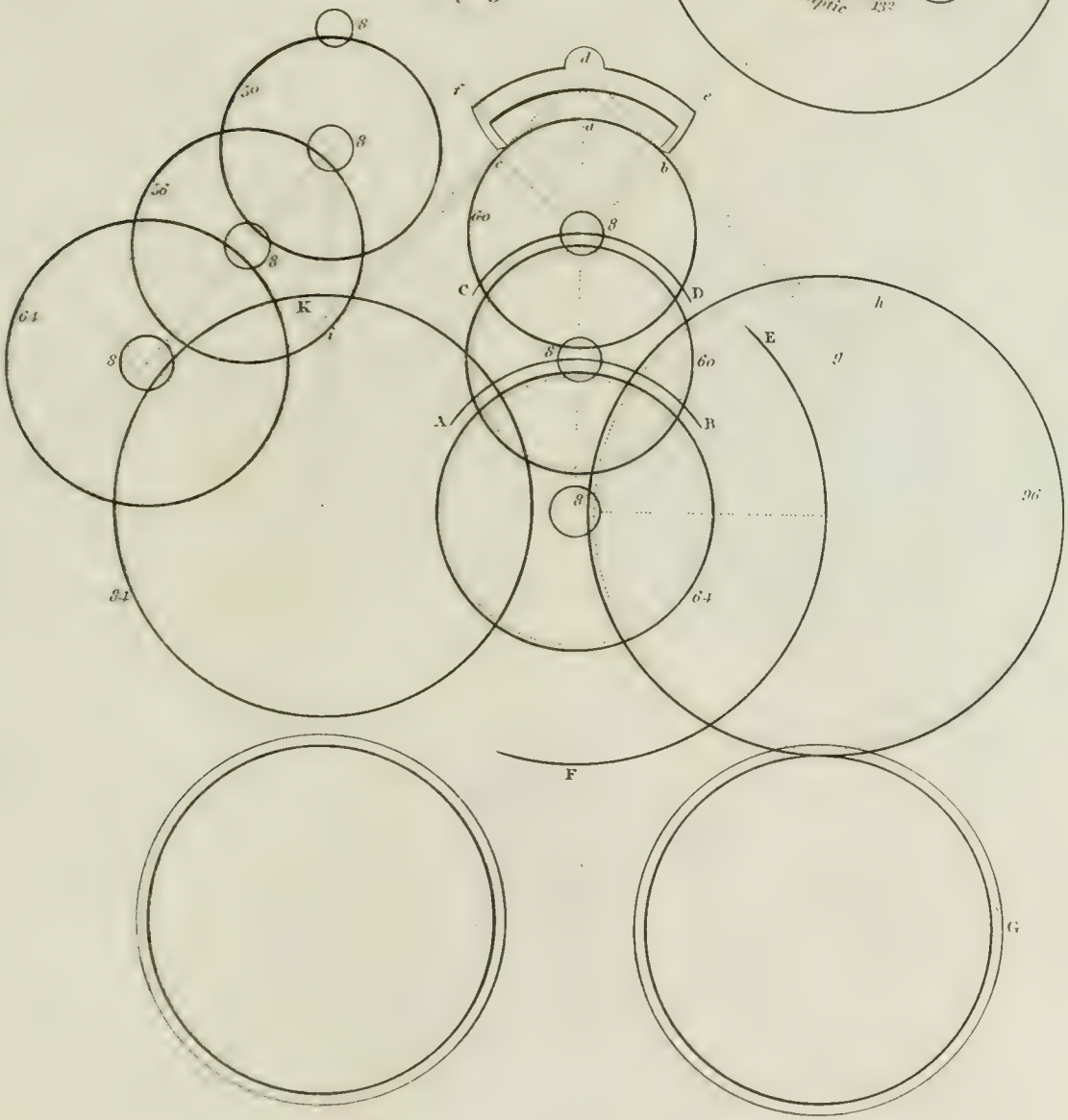


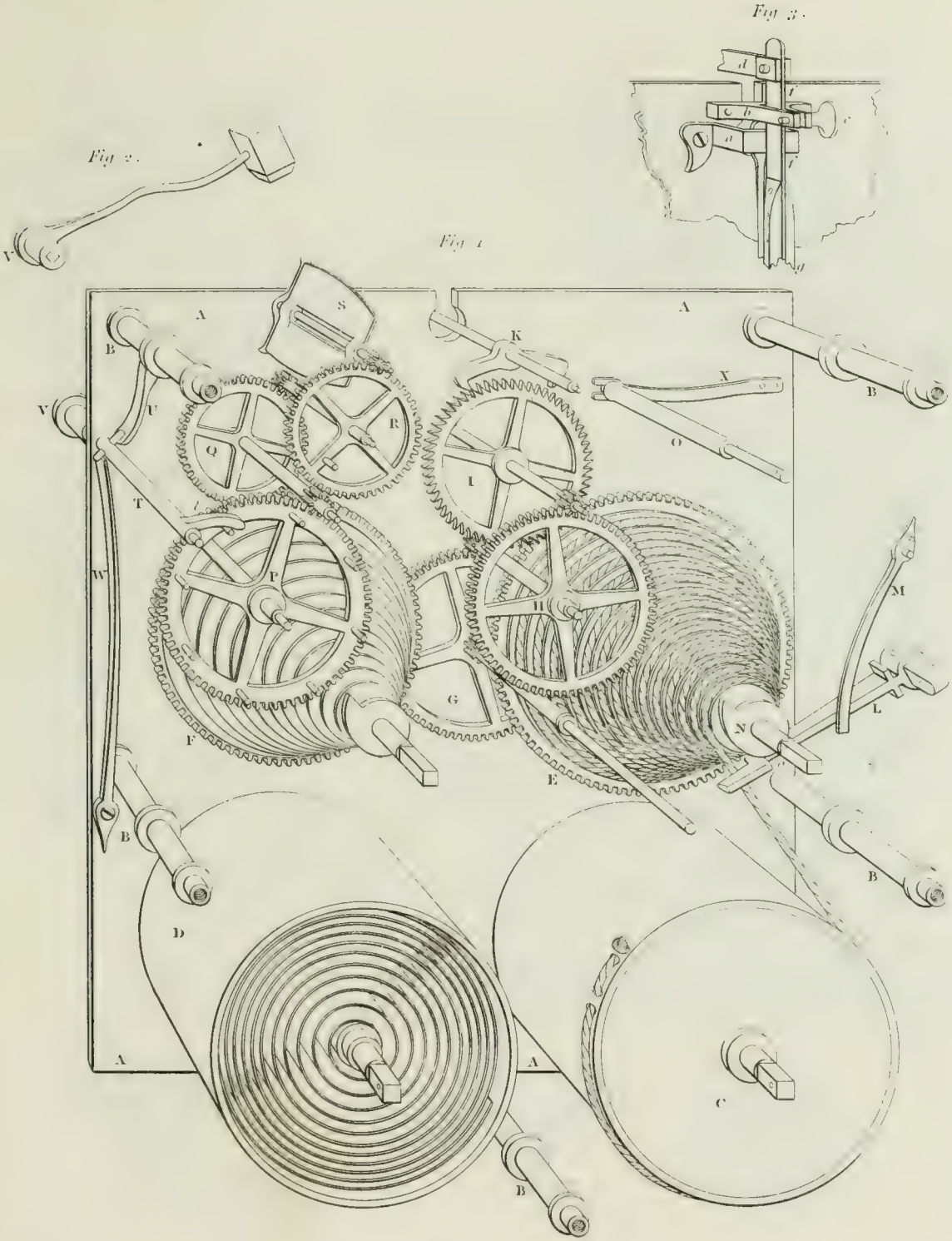
Fig. 3.



Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

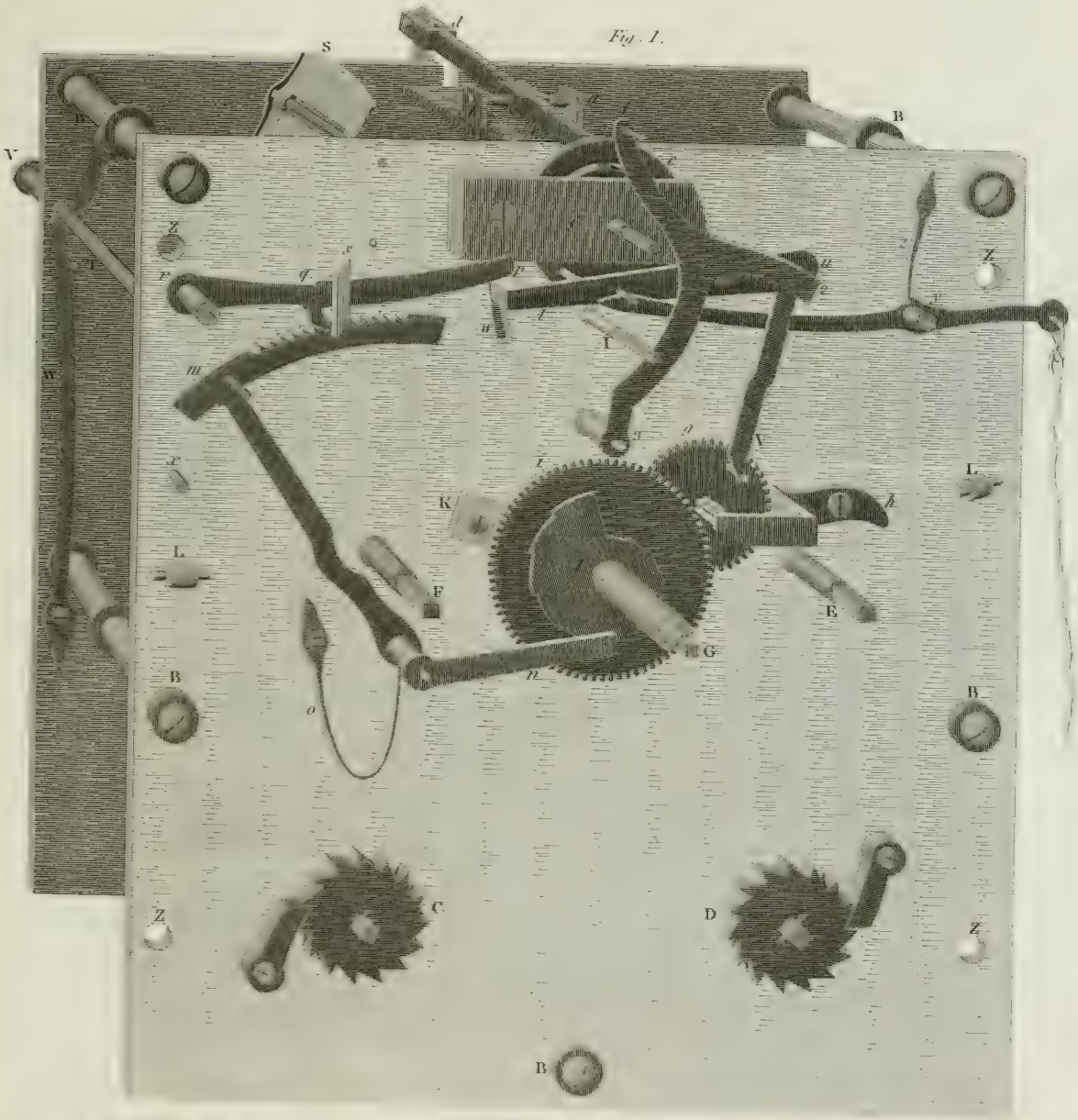
Portable eight days Clock.

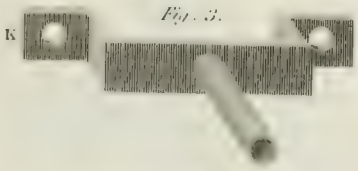


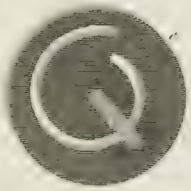
J. Farey Junr delin. Published as the Act directs, 1812, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by W. Lowry.

HOROLOGY.

DIAL WORK AND STRIKING PART OF AN EIGHT DAYS CLOCK.







Drawn by J. Farey Junr.

Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Mr. Mudge's, TIME KEEPER.

Fig. 3.

Fig. 2

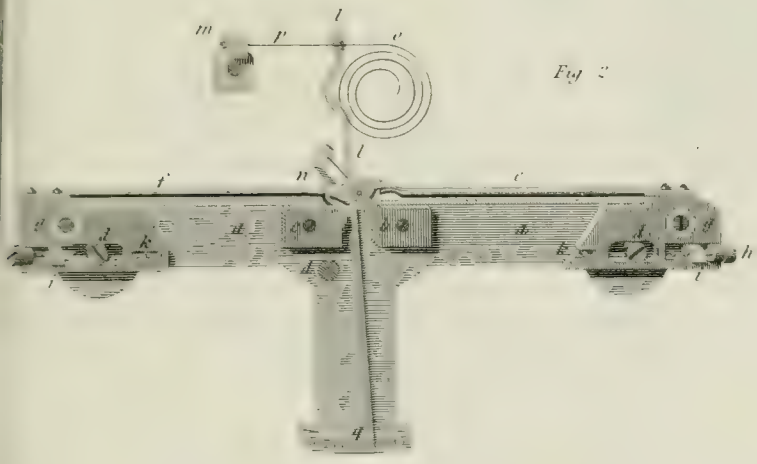


Fig. 1.

Fig. 5

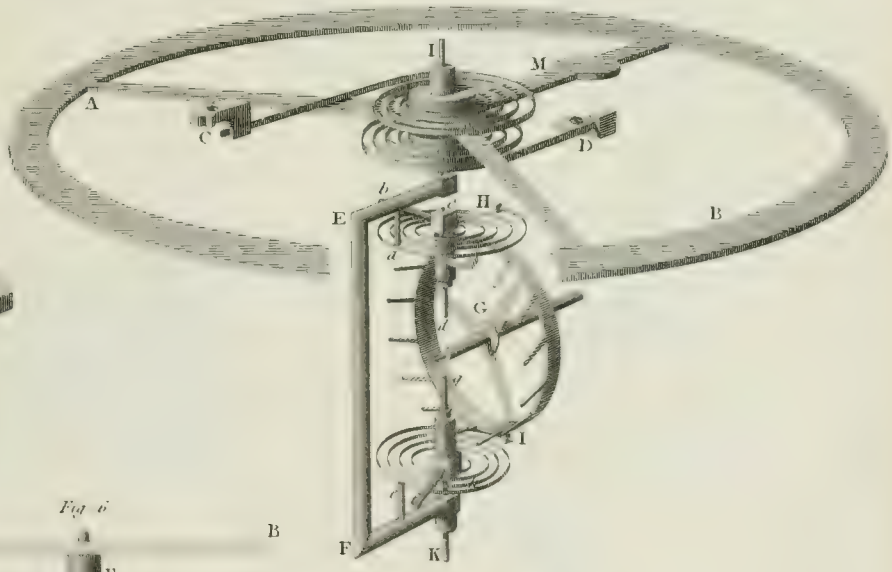


Fig. 4

Fig. 7

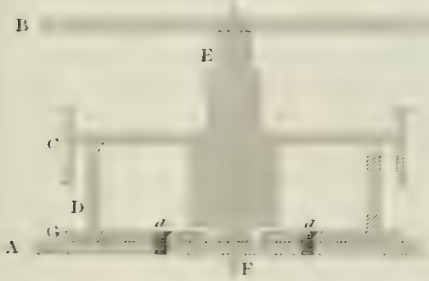
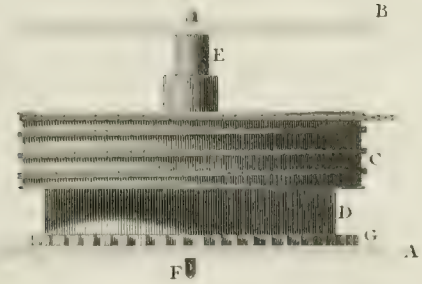


Fig. 6



Published as the Act directs, 1812, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

ARNOLD'S AND EARNSHAW'S CHRONOMETERS.

Fig. 1.

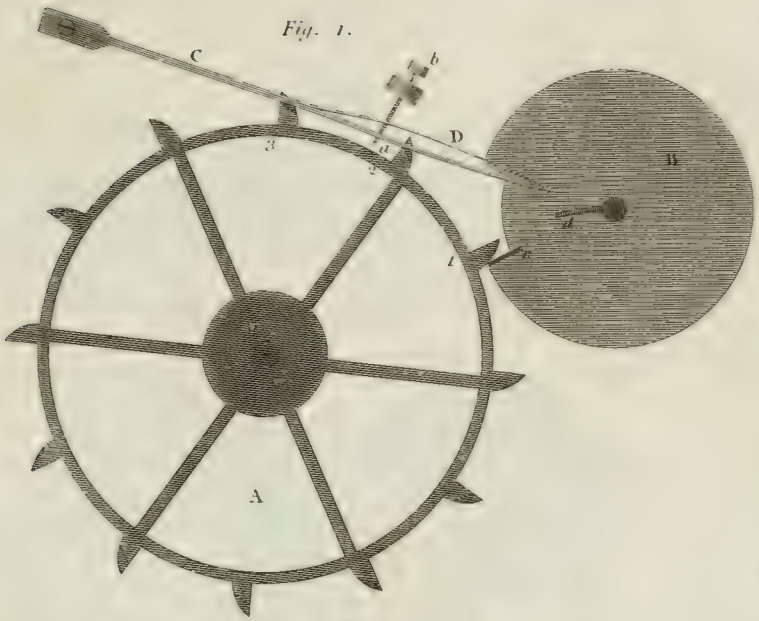


Fig. 2.

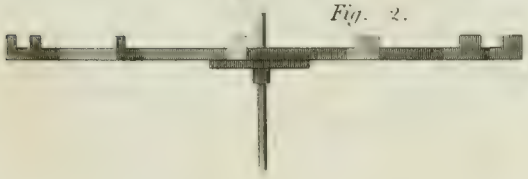


Fig. 3.

Fig. 4

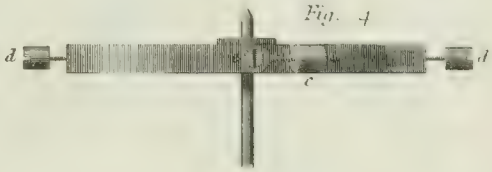


Fig. 5.

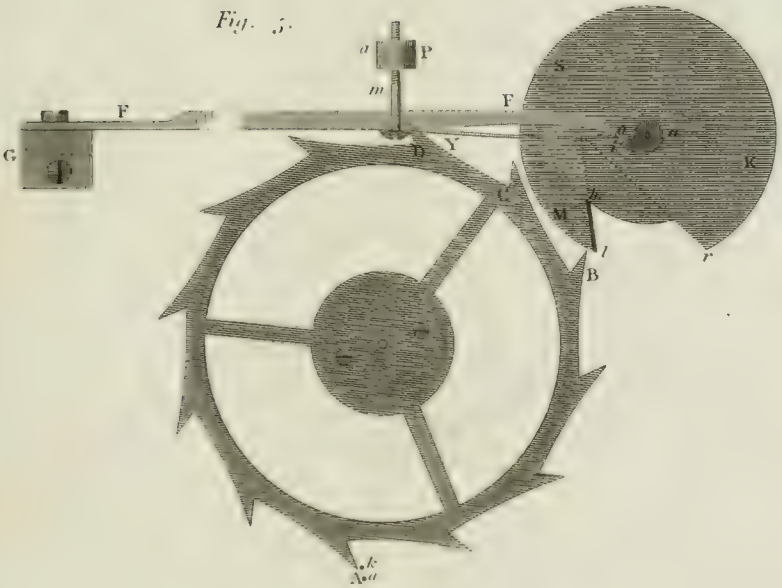
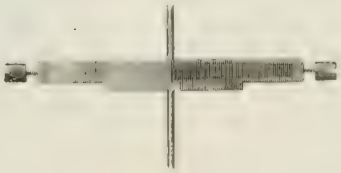


Fig. 6.

Fig. 7.



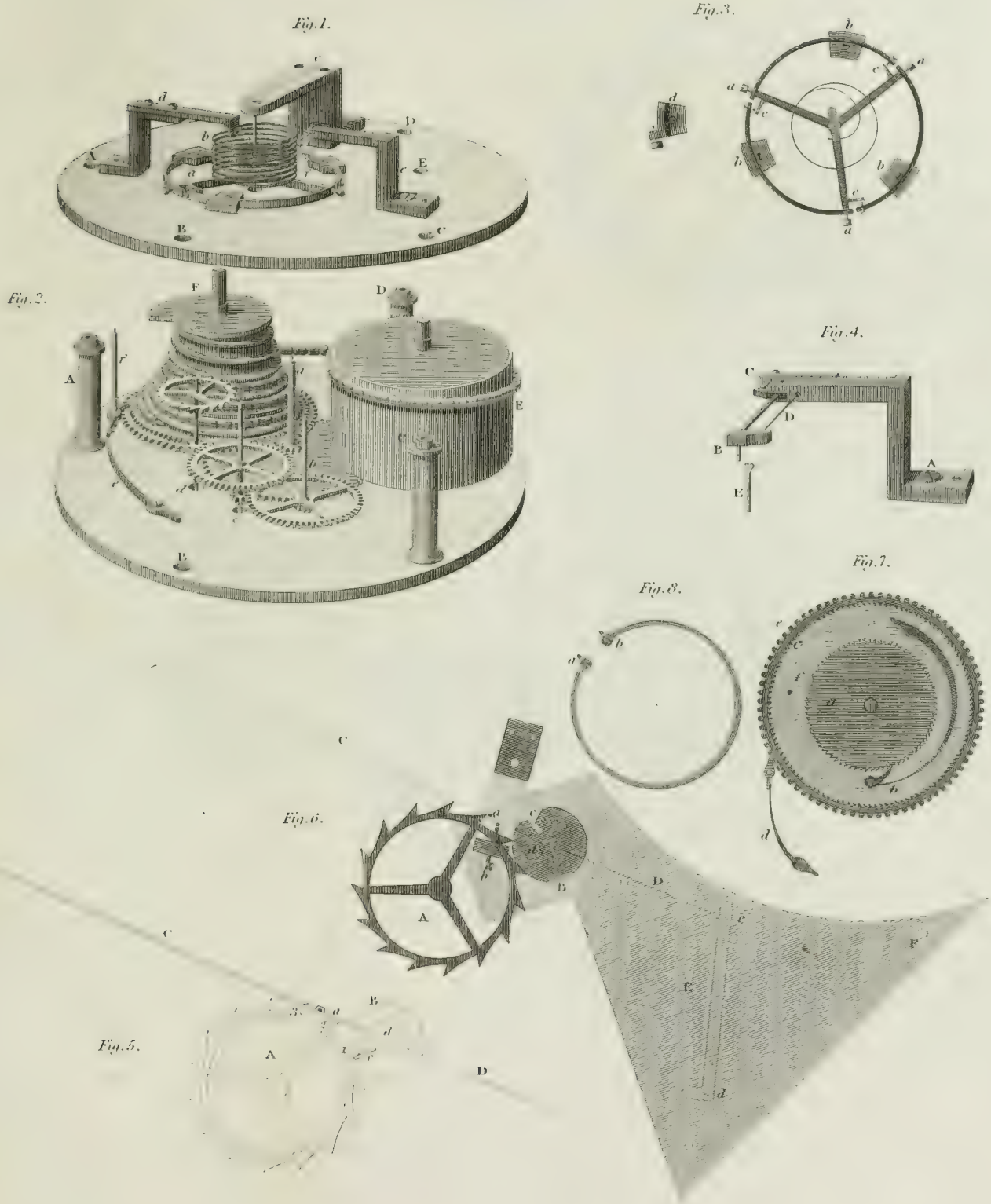
J. Farey Junr. delin.

Published as the Act directs, Decr. 1807, by Longman, Hurst, Rees & Orme, Paternoster Row

Engraved by Wilson Lon.

HOROLOGY.

BROCKBANK'S CHRONOMETER.

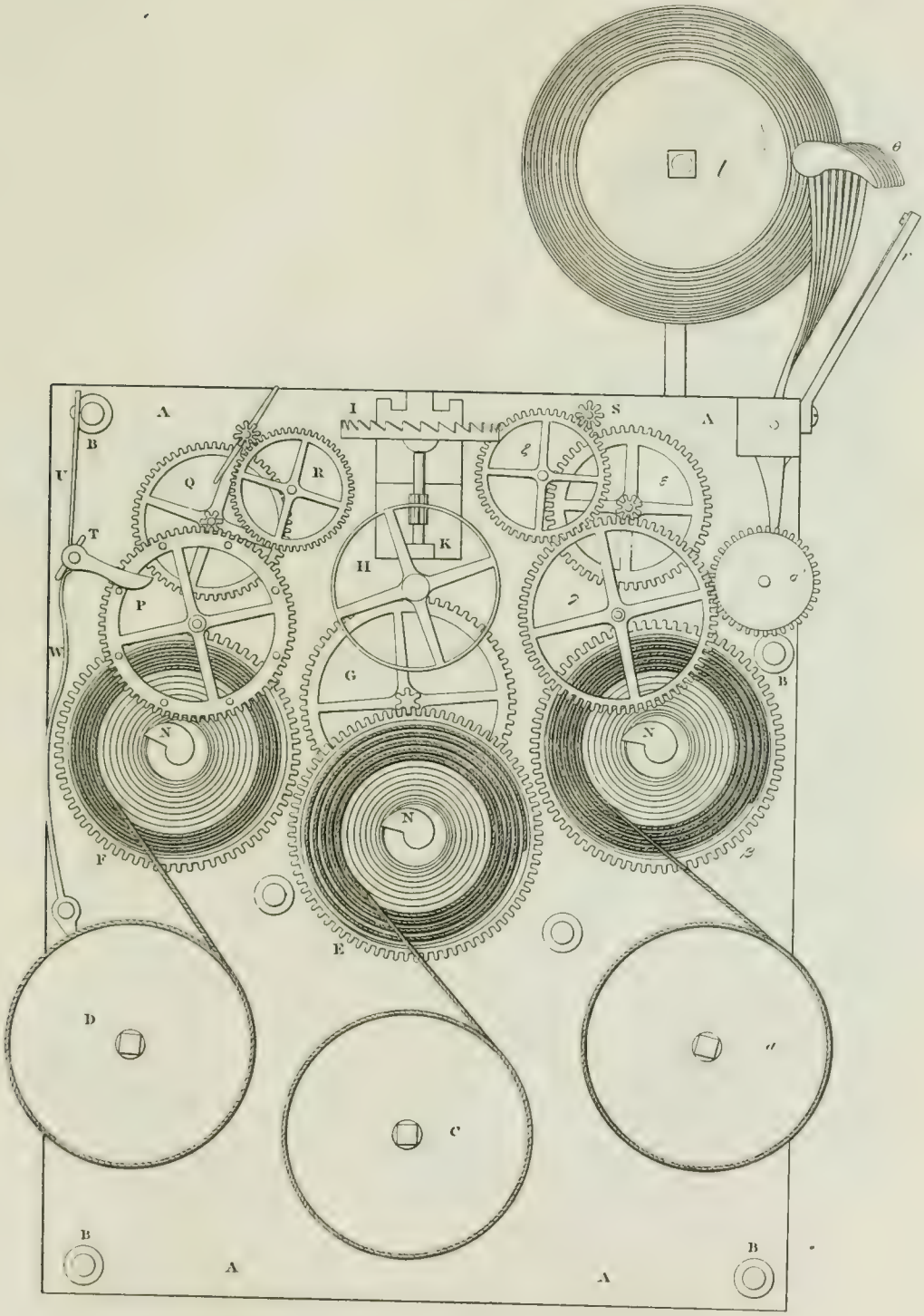


T. Farey Jun. del.

Published as the Act directs, 1817, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row, London.

Lowry sculp.

CLOCK WITH CHIMES.

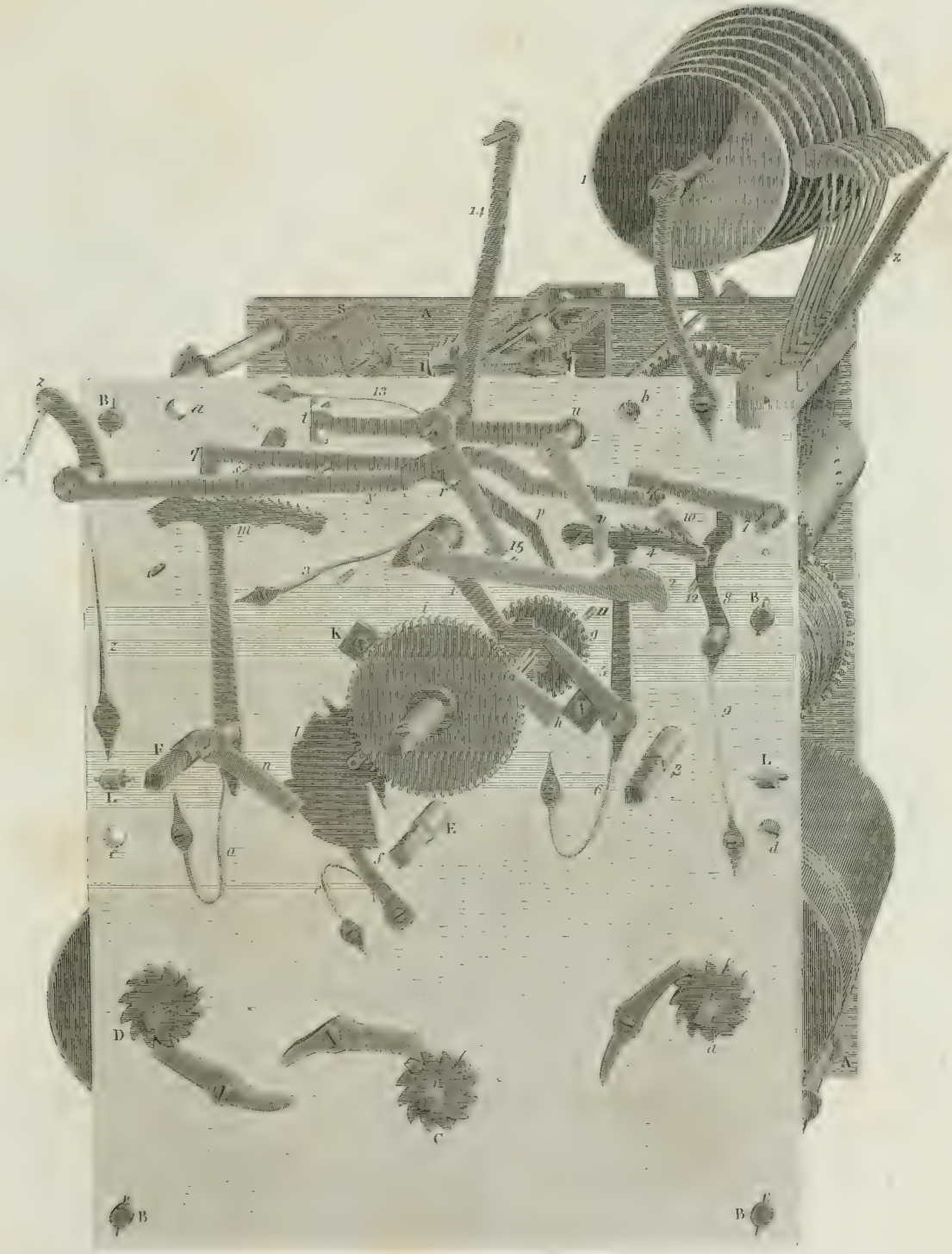


J. Farey Junr. delin.

Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

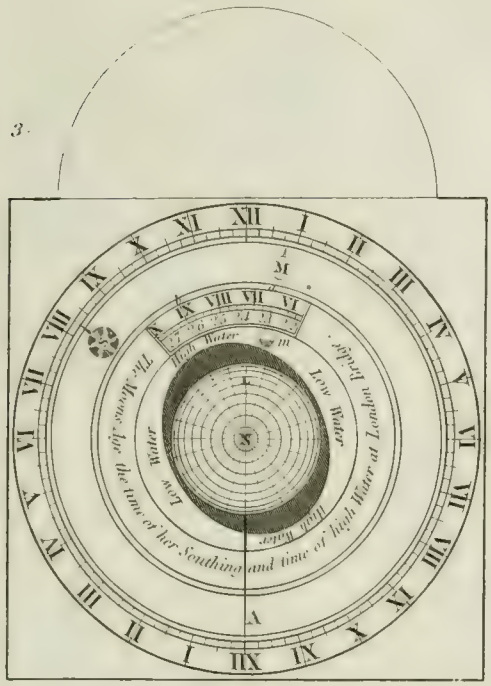
CLOCK WITH CHIMES.



J. Farey Junr. delin. Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row. Engraved by Wilson Lowry.

2nd Clock by Mr. Ferguson

Fig. 3.



Clock by Dr. Franklin

Fig. 1.

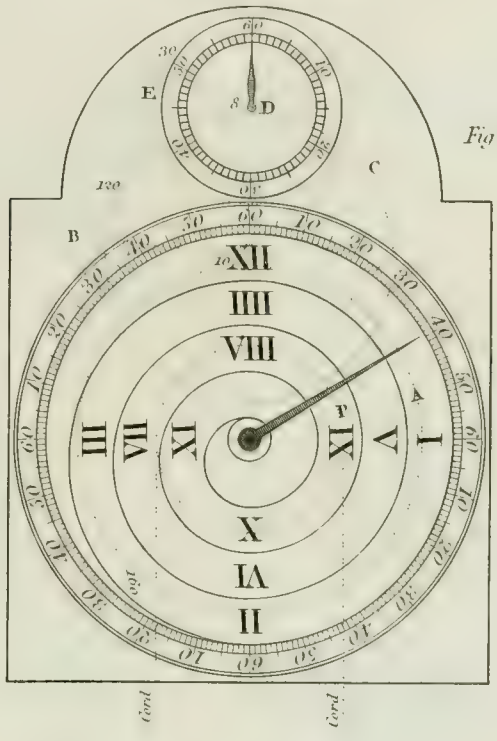


Fig. 4.

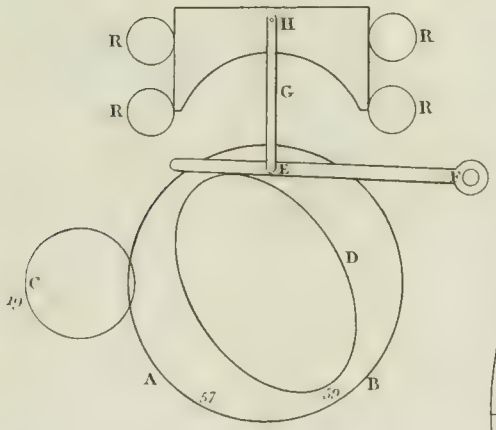
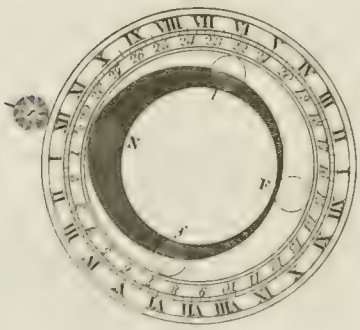
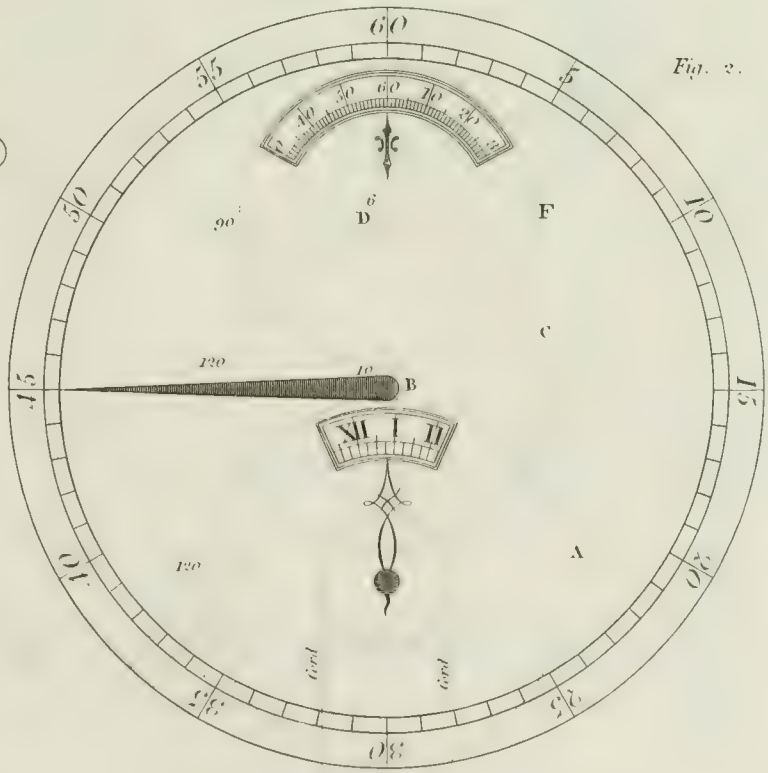


Fig. 5.



Clock by Mr. J. Ferguson

Fig. 2.



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Engraved by Wilson Lowry

Published as the Act directs, 1809, by Longman, Hurst, Rees and Orme, Paternoster Row.

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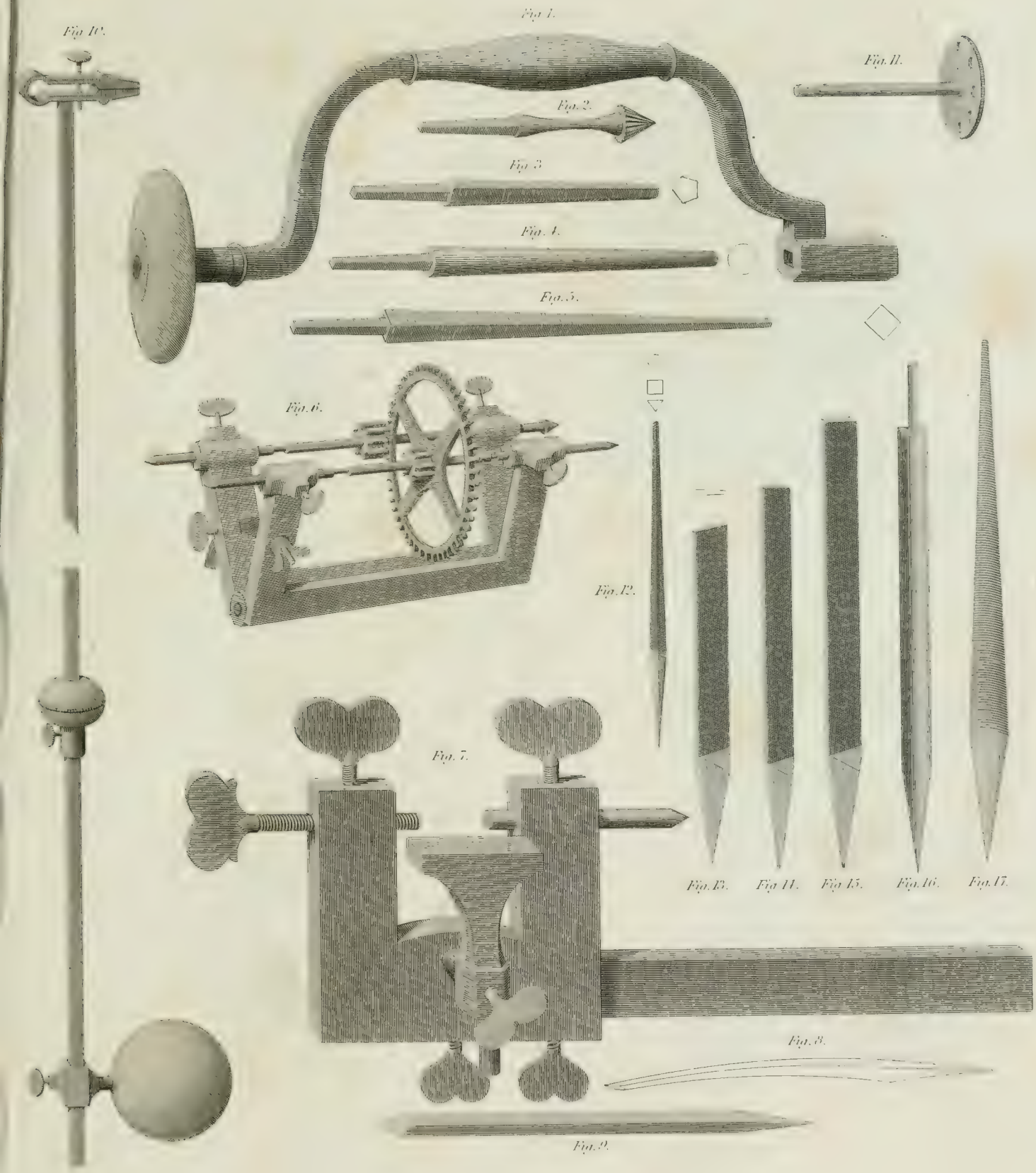
CLOCK TOOLS.

Published by Longman, Hurst, Rees & Orme, Paternoster Row. March 1st 1809.

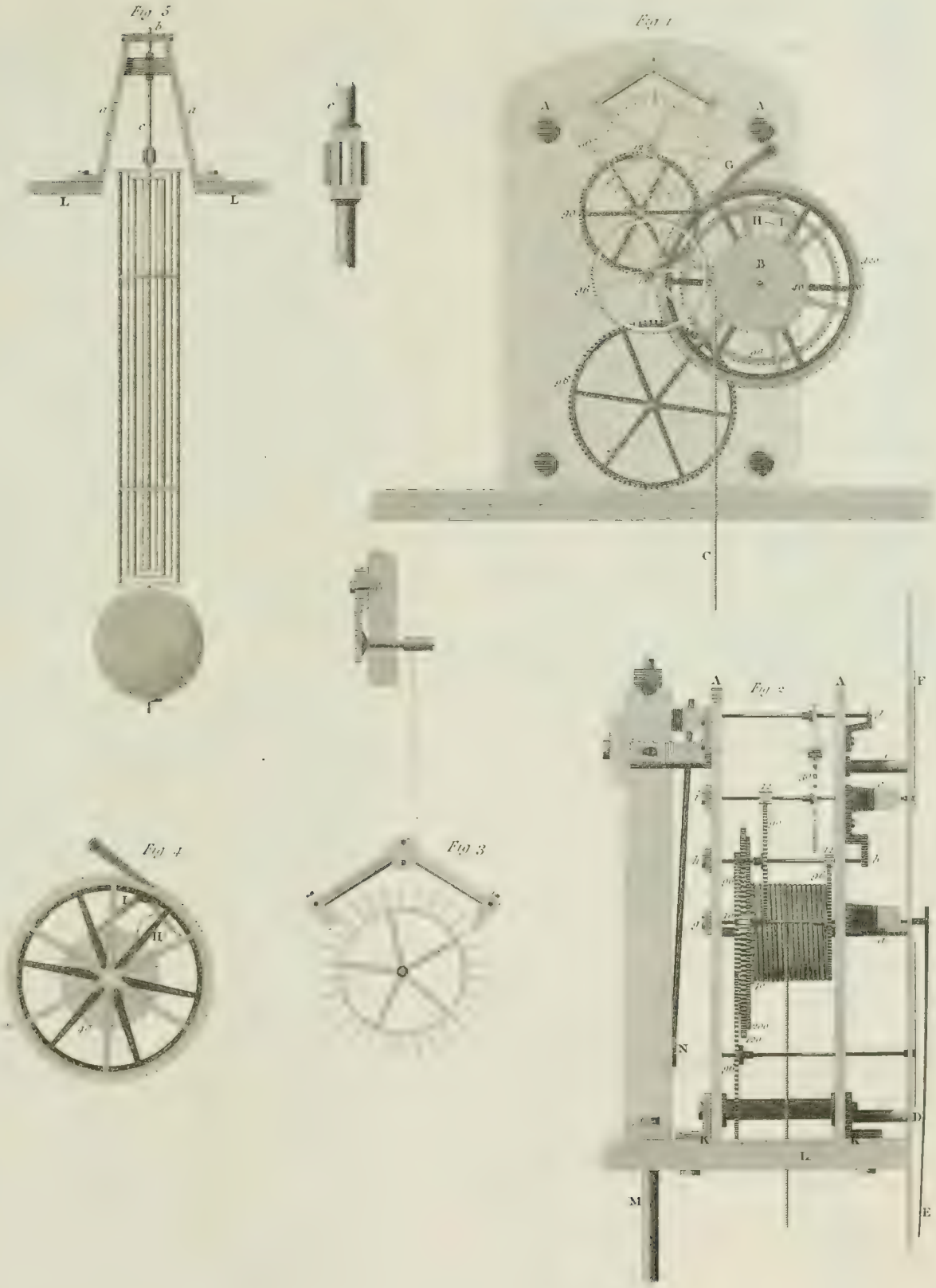
Engraved by Wilson Lowry.

HOROLOGY.

CLOCK TOOLS.



Astronomical Clock by REID.



J. Farey Junr delin. Published as the Act directs, 1810, by Longman, Hurst, Rees & Orme, Paternoster Row. Engraved by W. Lowry.

Astronomical Clock by Messrs. Brockbanks.

Fig. 1

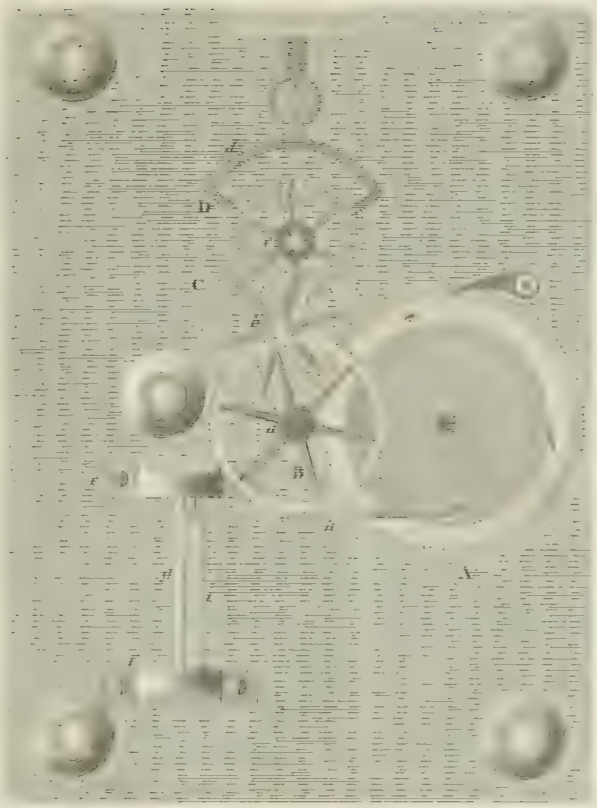


Fig. 2.

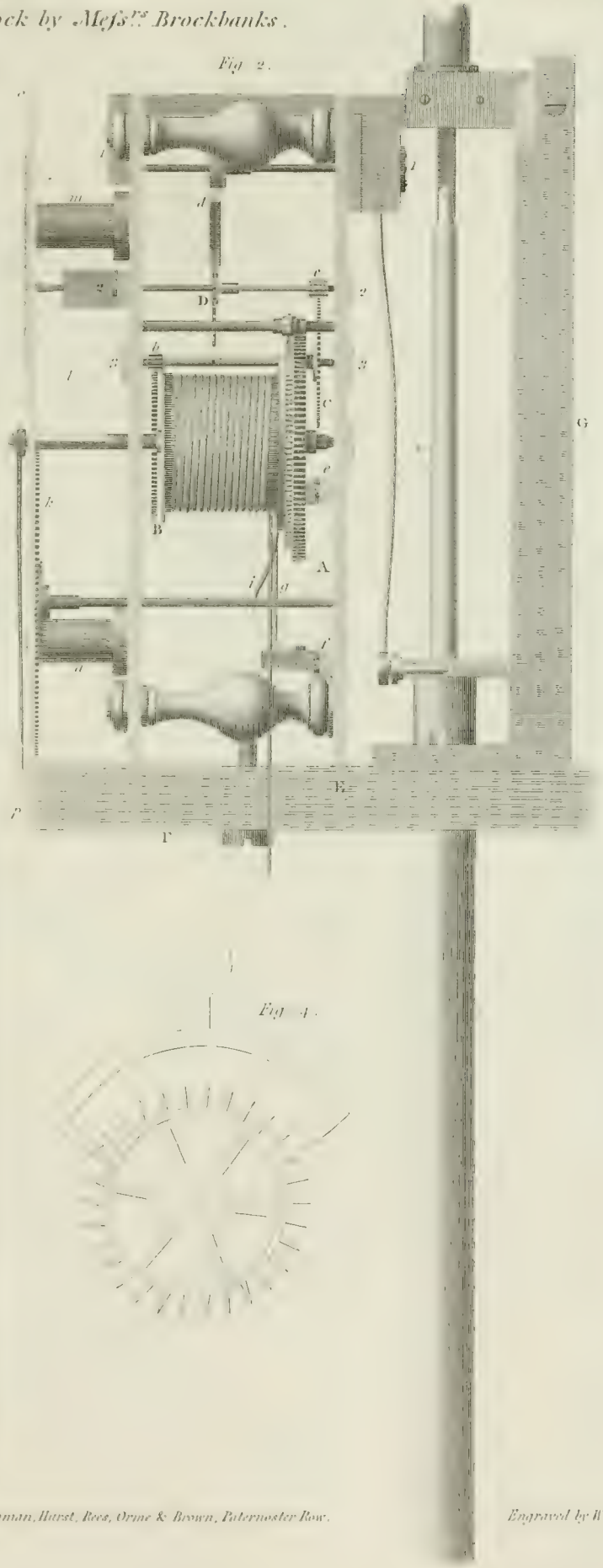


Fig. 3

Fig. 4.

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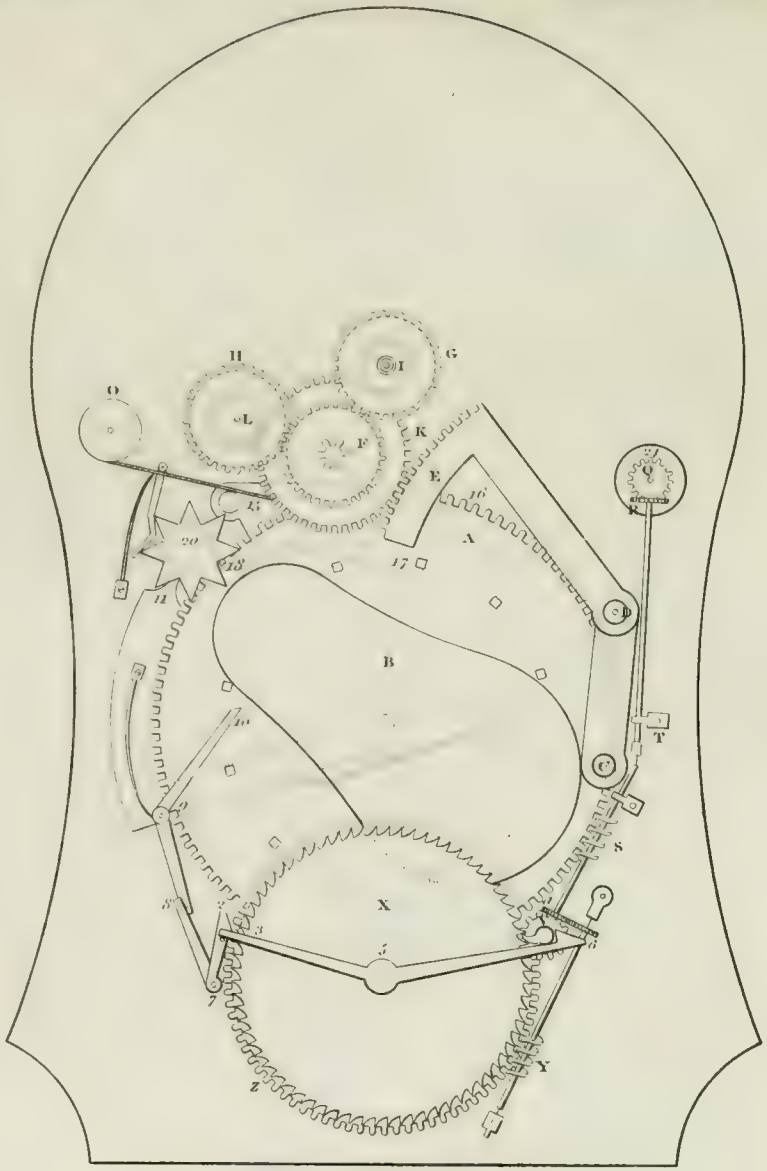
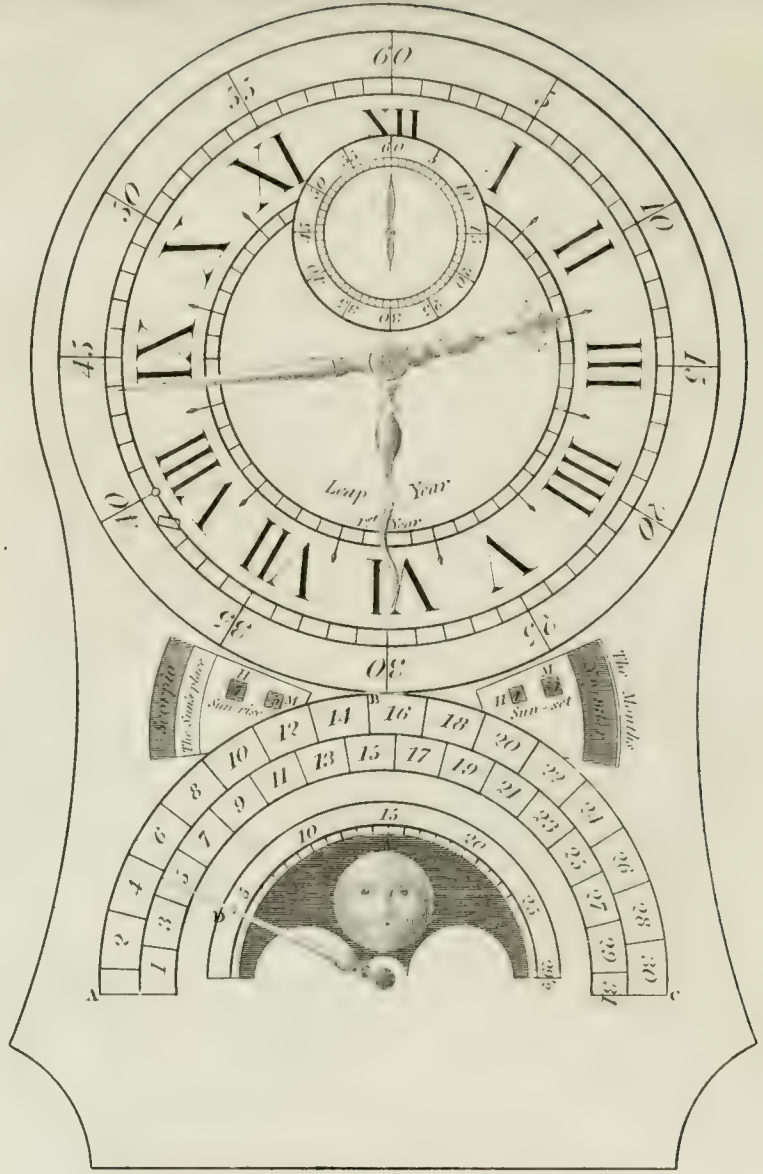
Fig. 1. EQUATION CLOCK BY ENDERLIN. Fig. 2.





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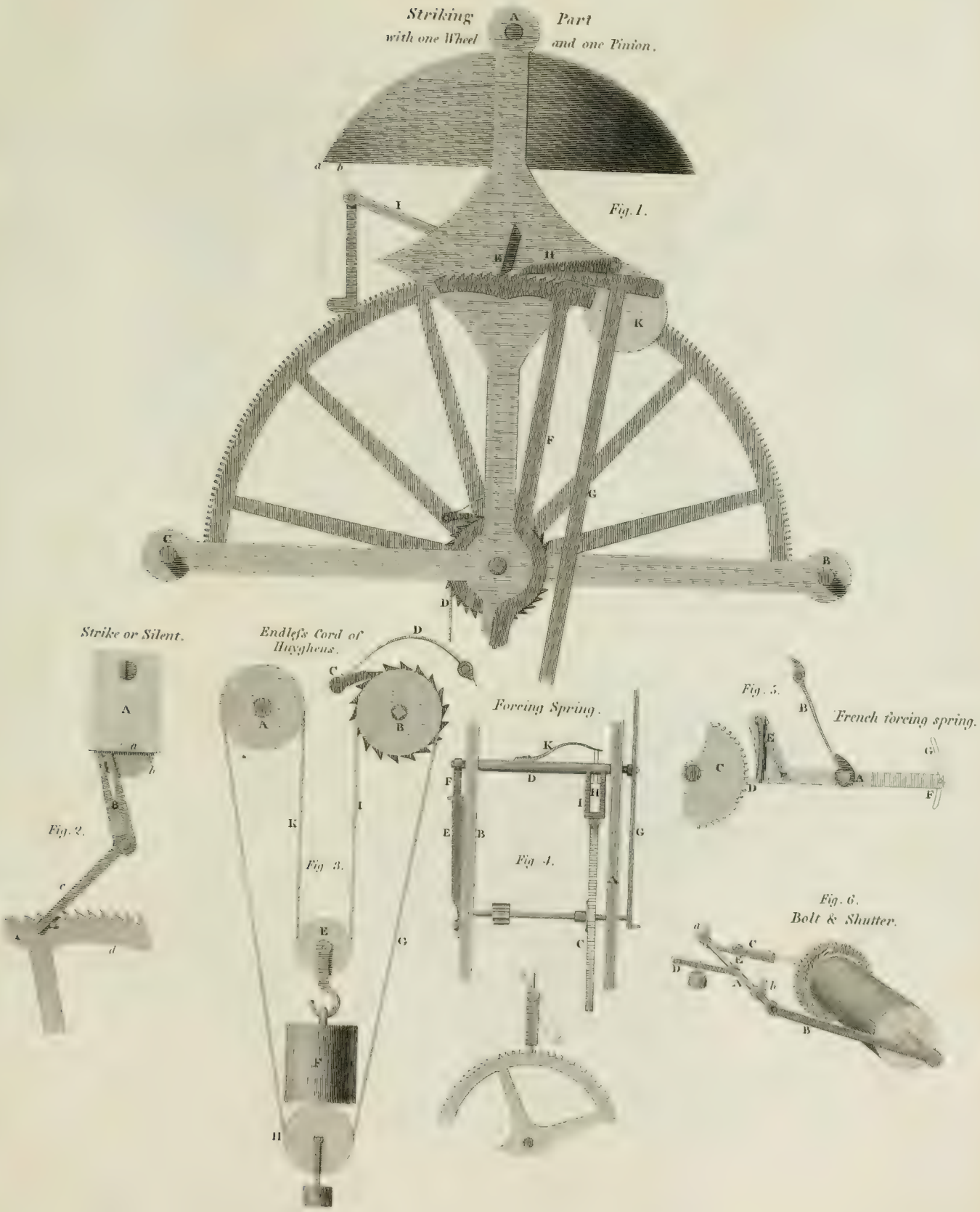

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HOROLOGY.

Fig. 1.

Massey's striking part.

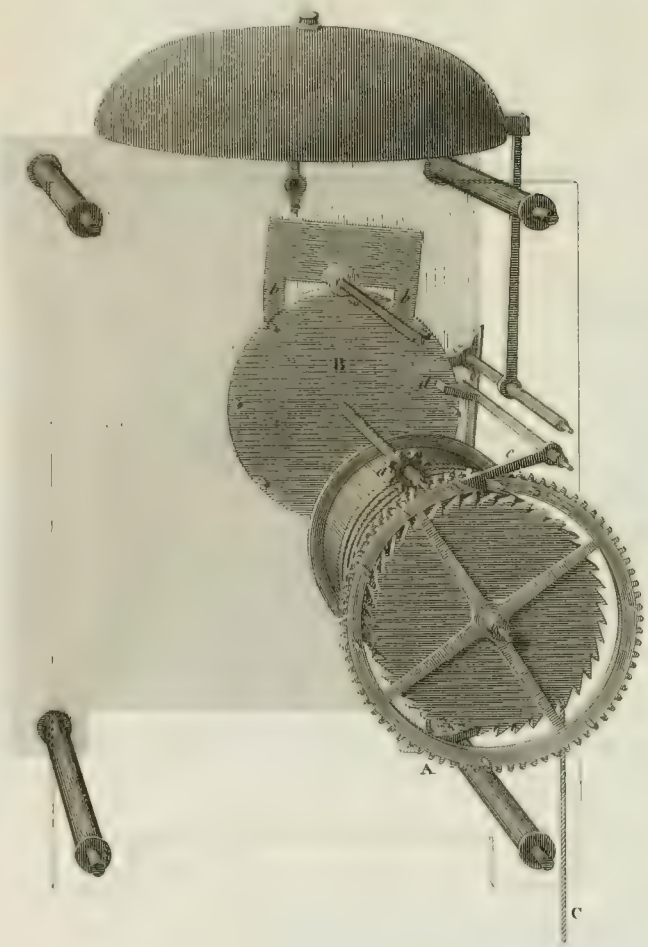

Fig. 2.

Prior's striking part.

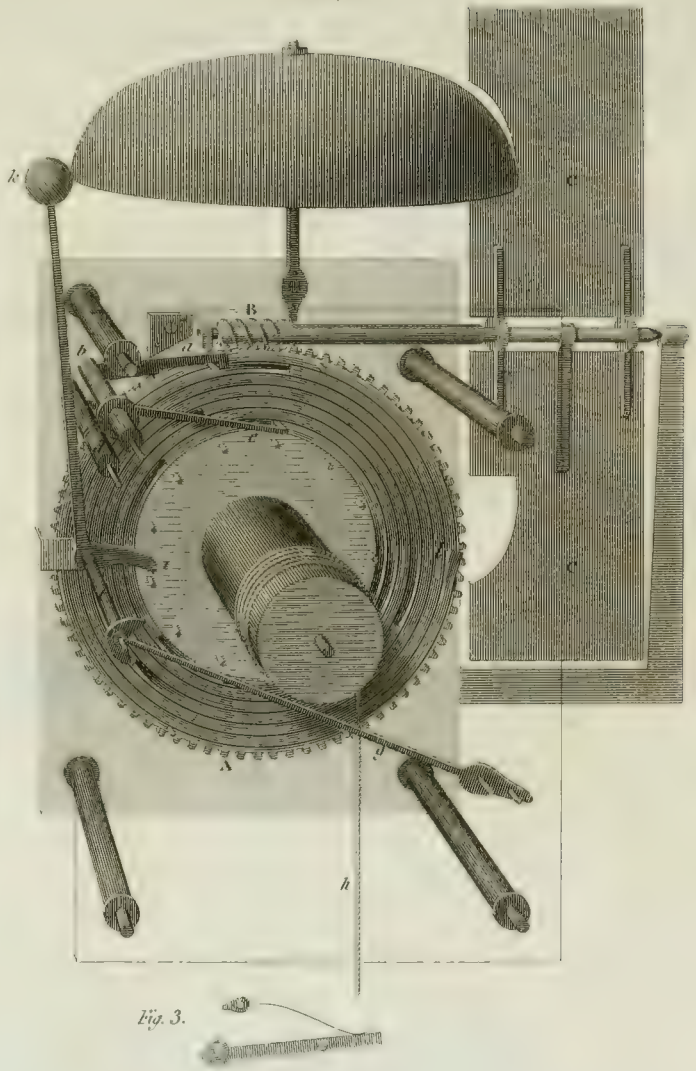

Fig. 3.

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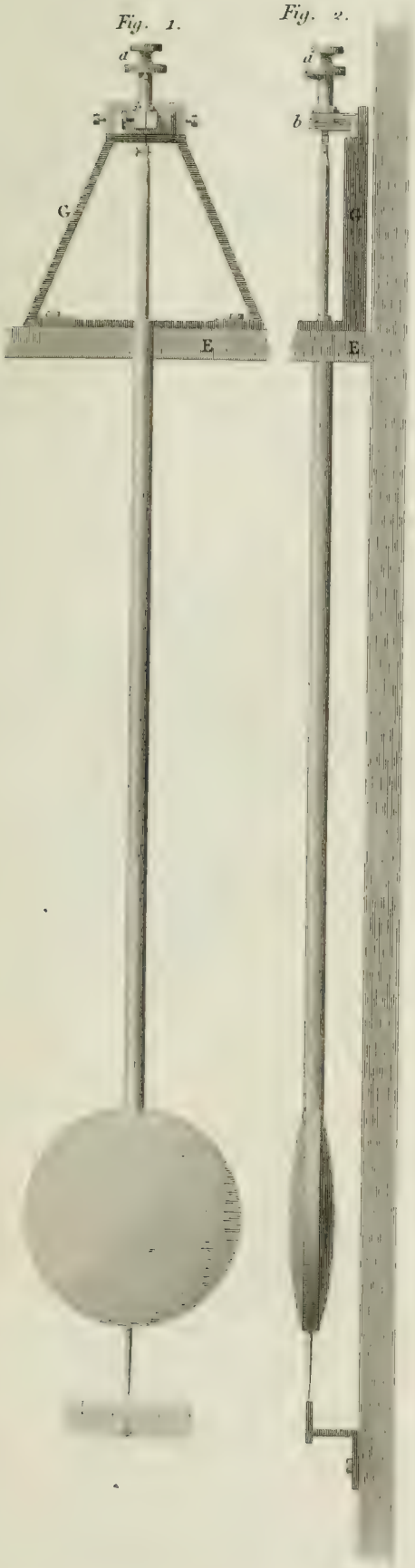
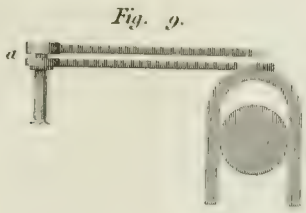
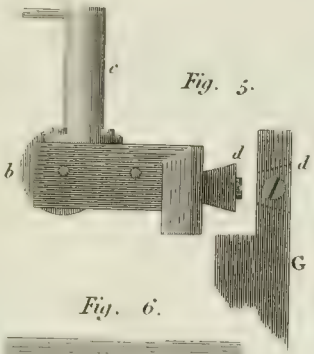
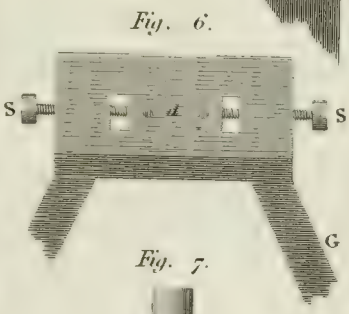
Lowry sculp.

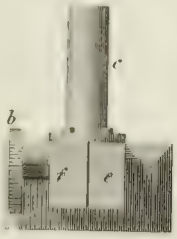
TROUGHTON'S PENDULUM.

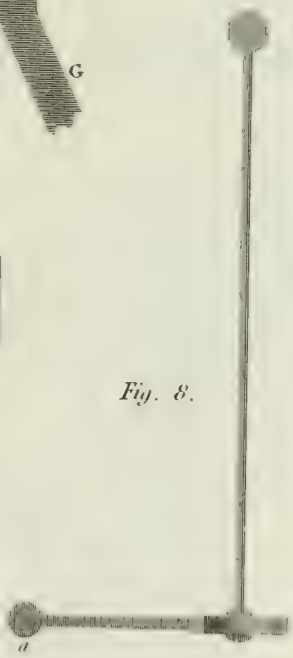












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HOROLOGY.

COMPENSATION CURBS.

Fig. 1

Fig. 3.

Fig. 4.

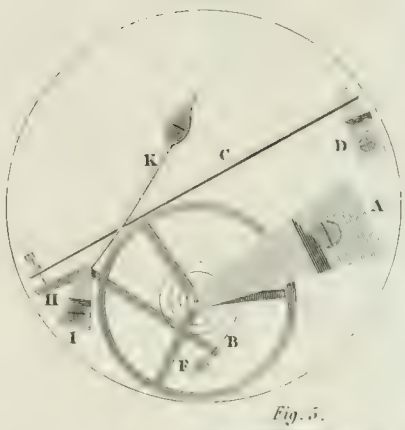


Fig. 2.

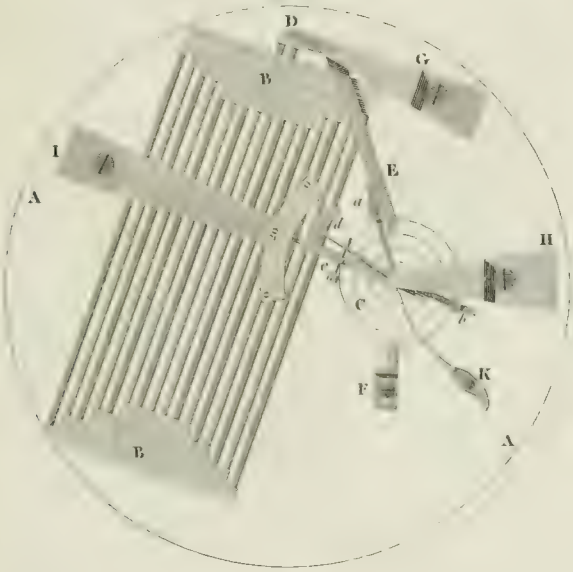


Fig. 5.

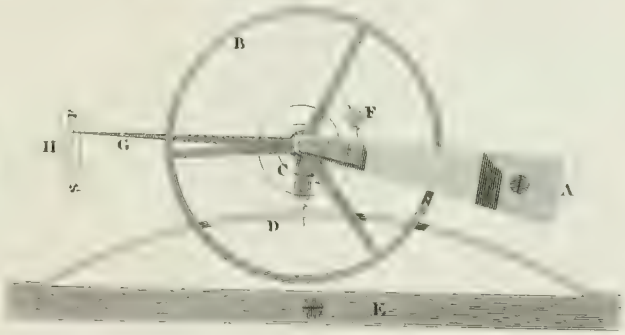
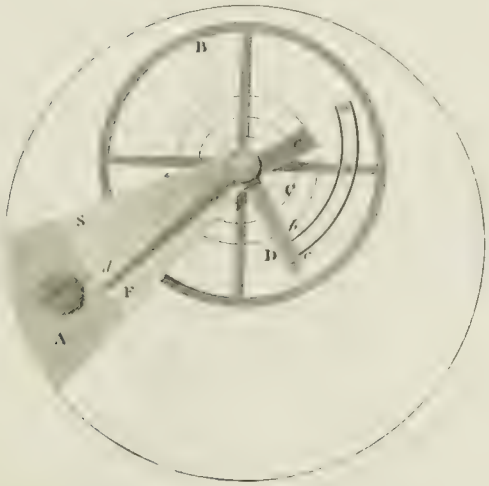


Fig. 6.

Fig. 7.



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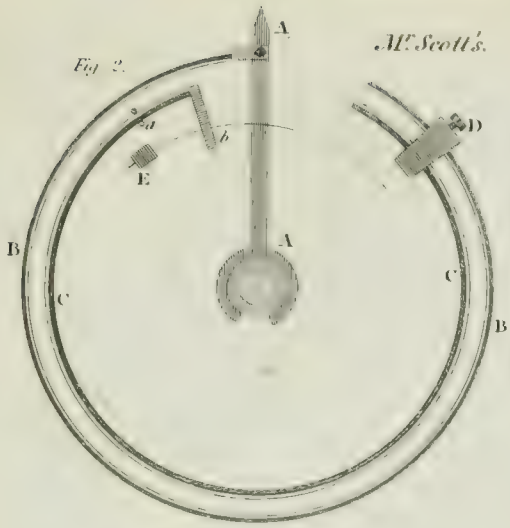
COMPENSATION CURBS AND BALANCES.

Fig 2. Mr. Scott's.



Side View

Mr. Cumming's.

Fig 1

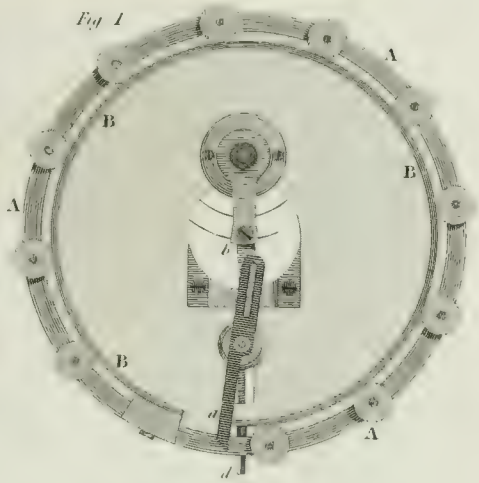
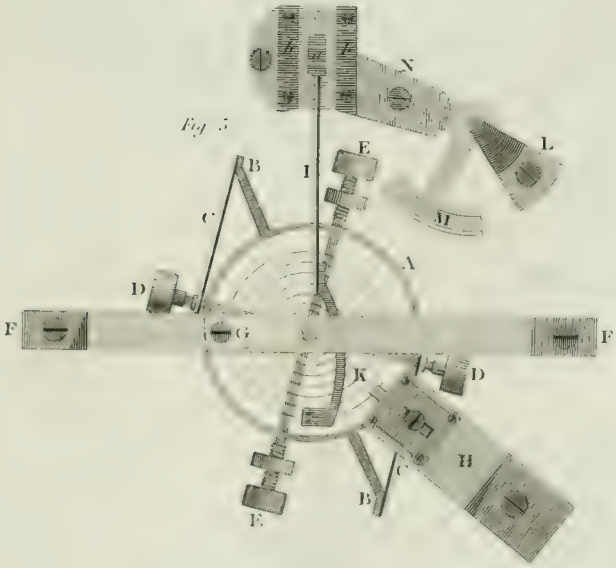


Fig 5



Mr. Hardy's balance.

Fig 3.

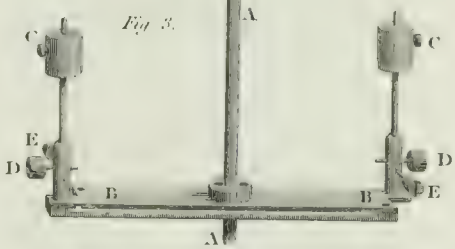
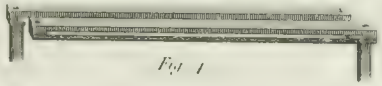
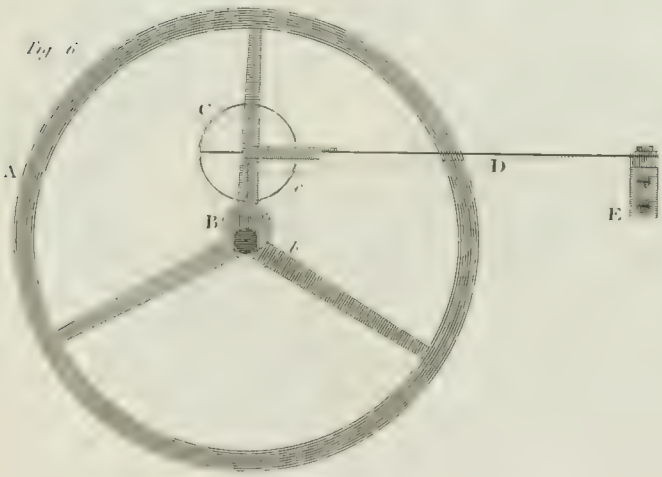


Fig 4



Berthoud's.

Fig 6



Mr. Hardy's, Isochronal compensation

Fig 7

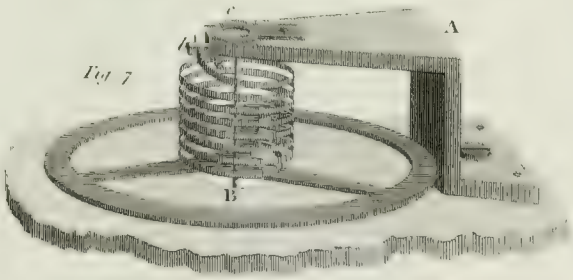


Fig 8.

J. Farey Junr. delin. Published as the Act directs, 1817, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Lowry Sc.

DIAL WORK OF A CLOCK SHEWING THE MOONS AGE, PHASES &c.

Fig 1.

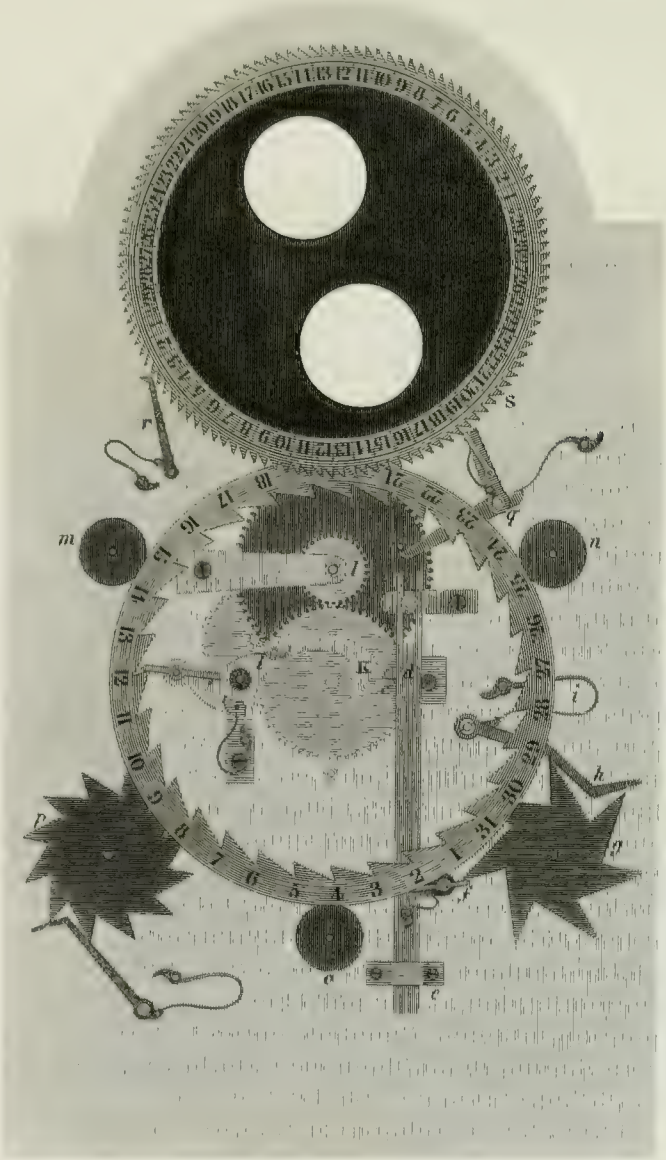
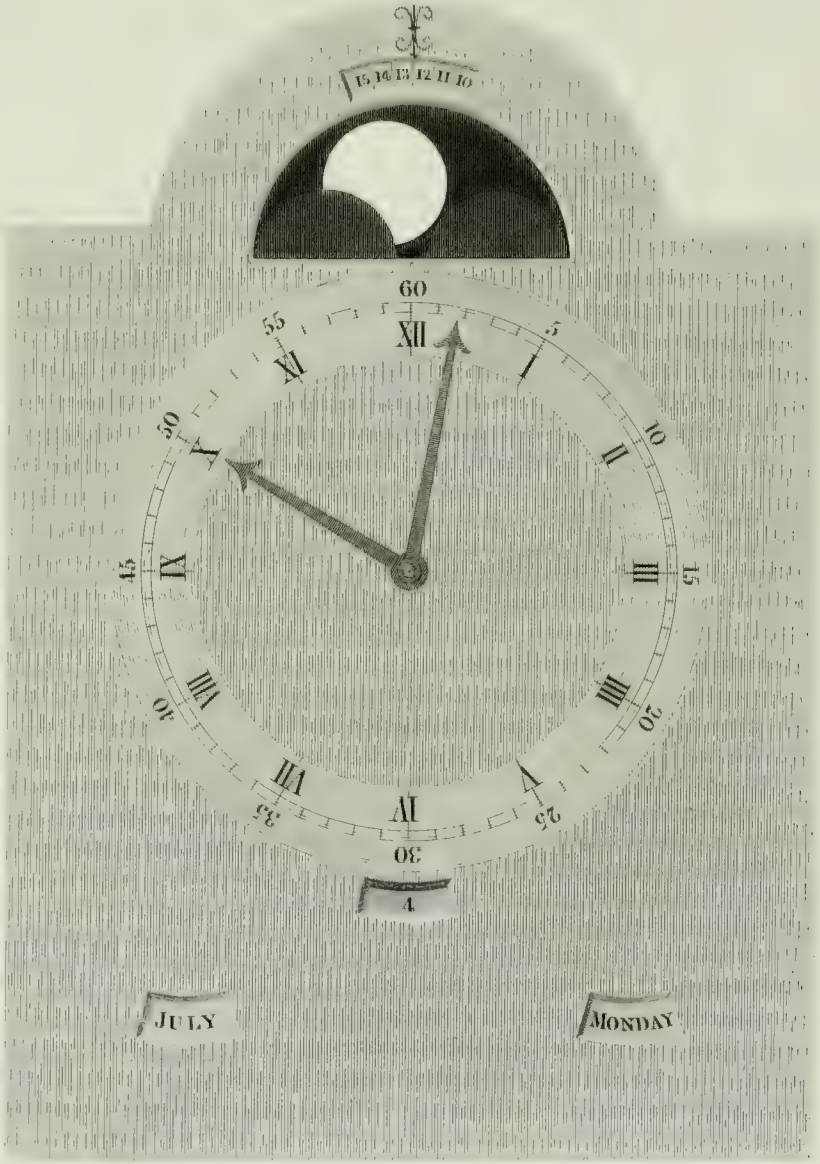


Fig. 2.



J. Farey Junr. delin. Published as the Act directs, 1809, by Longman, Hurst, Rees & Orme, Paternoster Row. Engraved by Wilson Lowry.

New DIAL work of a small spring Clock shewing the Phenomena of the Moon, &c.

Fig. 2.

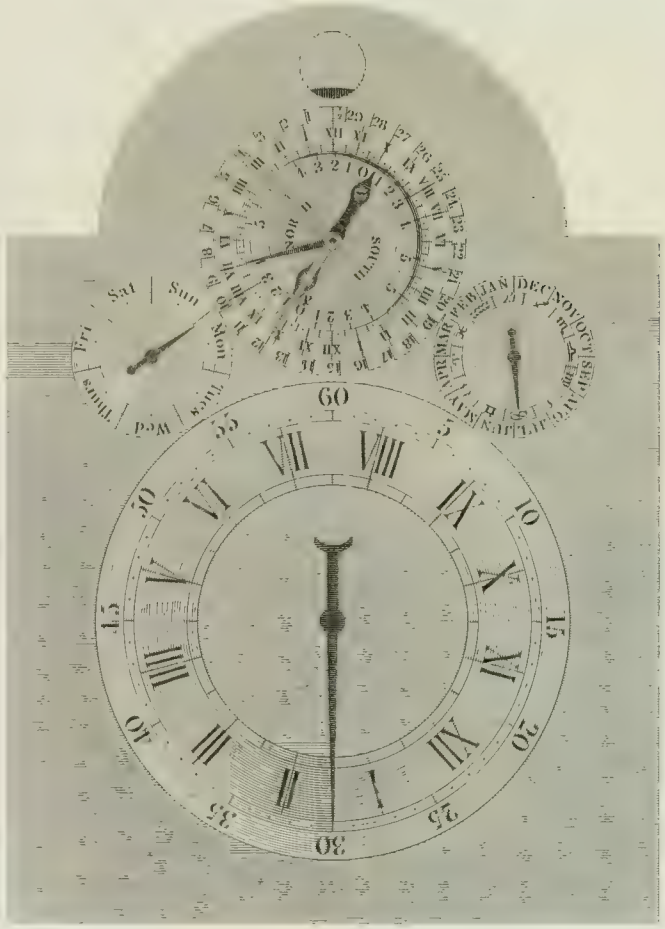
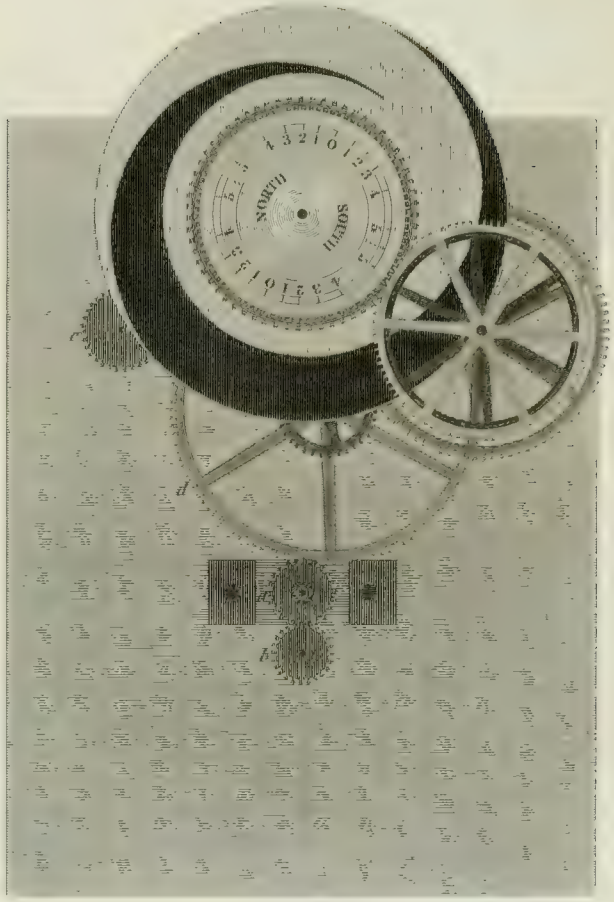


Fig. 1.



J. Varg. Junr delin. Published as the Act directs 1812 by Longman Hurst Rees Orme & Brown Paternoster Row. Engraved by Wilson Lowry.

HOROLOGY.

Dial Work.

Fig. 1

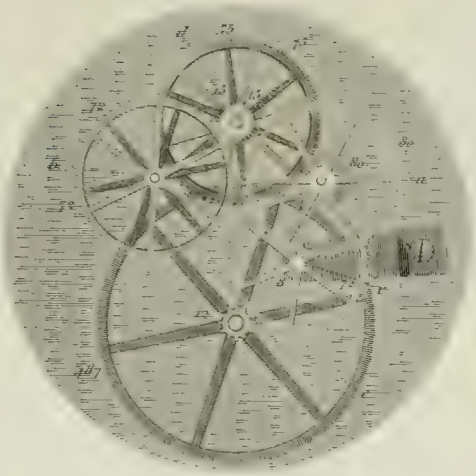
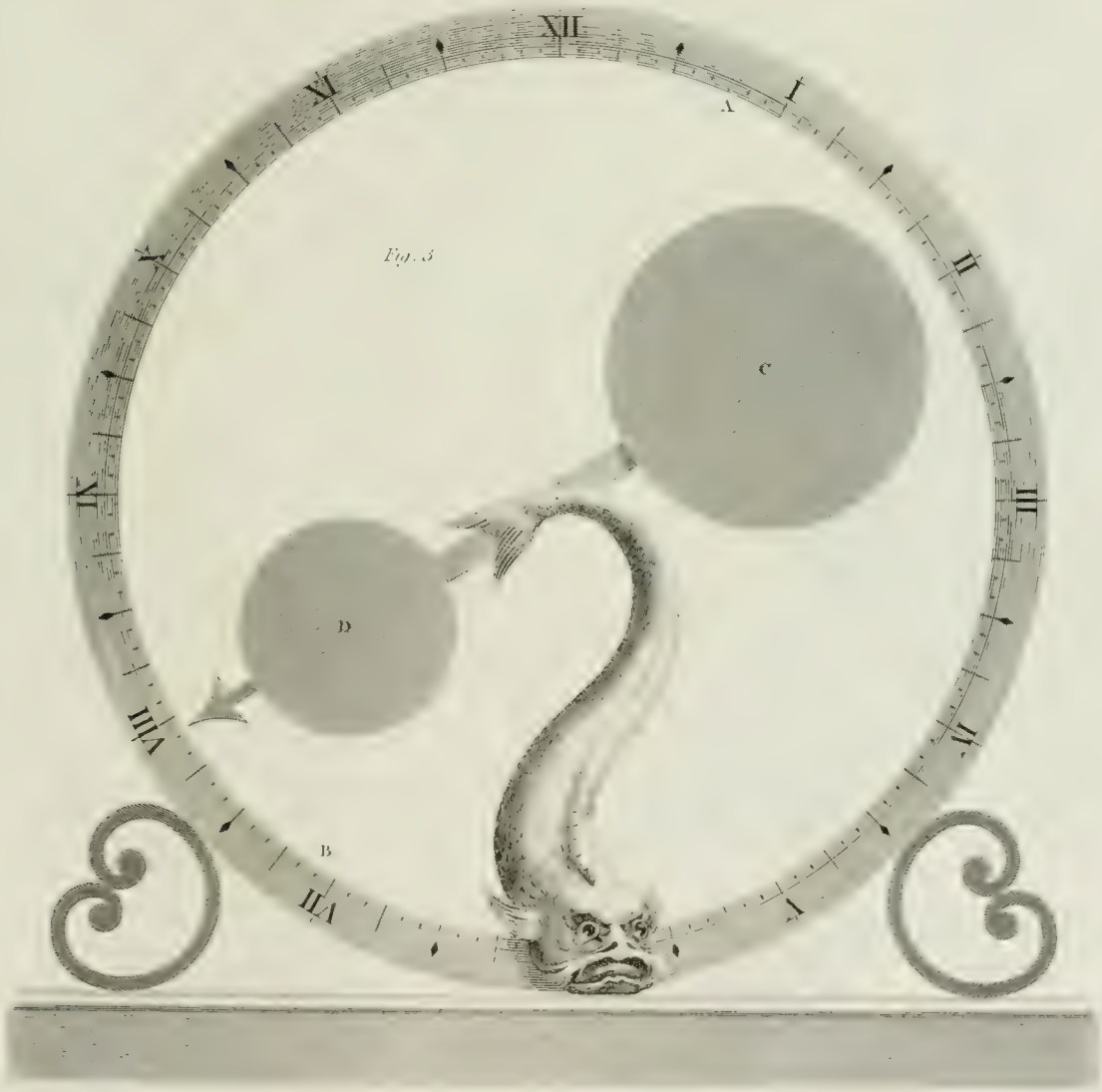


Fig. 2



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ESCAPEMENTS.

Fig. 1.

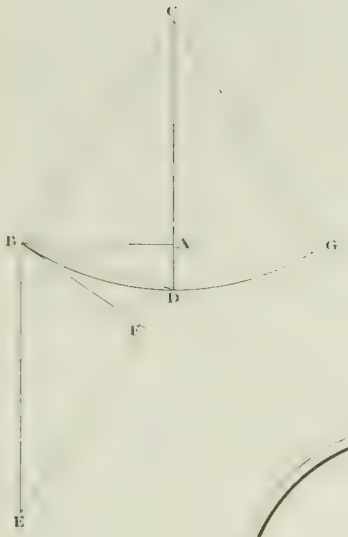


Fig. 2.

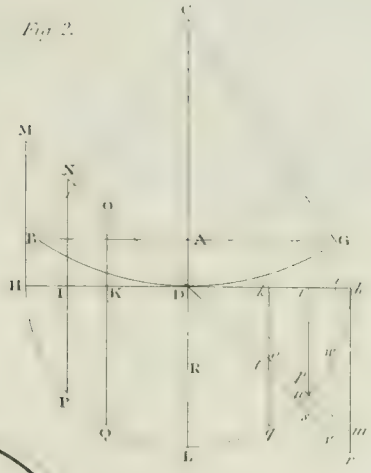


Fig. 3.

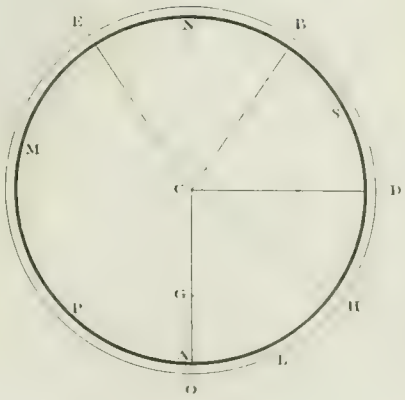
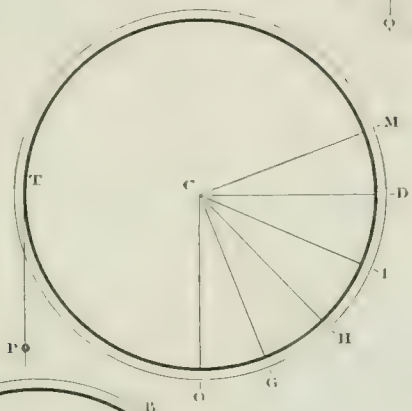
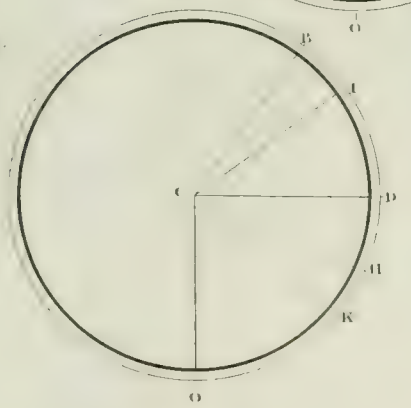


Fig. 4.



Mr. Atwood's Theory of the Balance.

Fig. 5.



Crown Wheel.

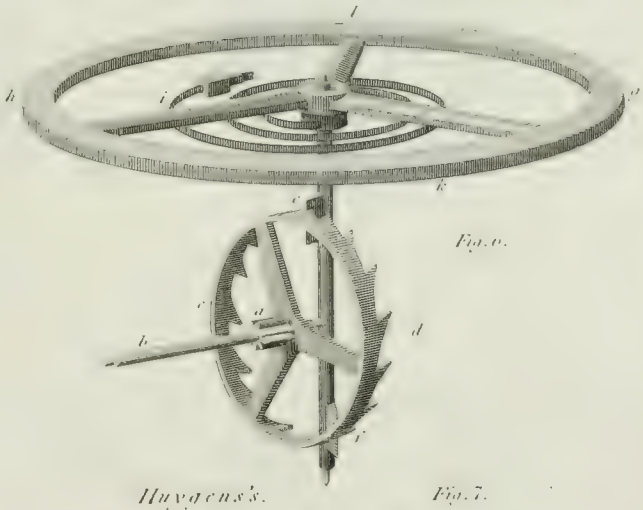
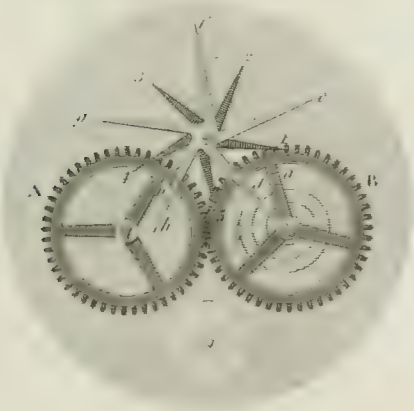
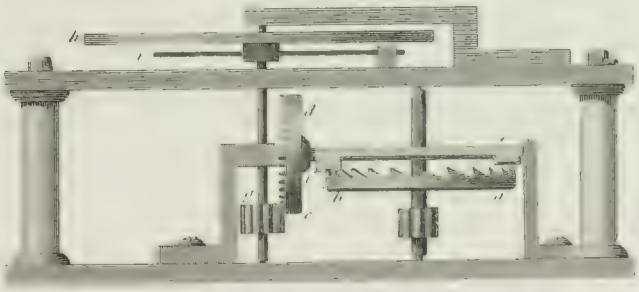


Fig. 6.

Dr. Hook's. & Du Tertre's, Fig. 8.



Huygens's. Fig. 7.



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HOROLOGY.

ESCAPEMENTS.

Fig. 1.
Sully's.

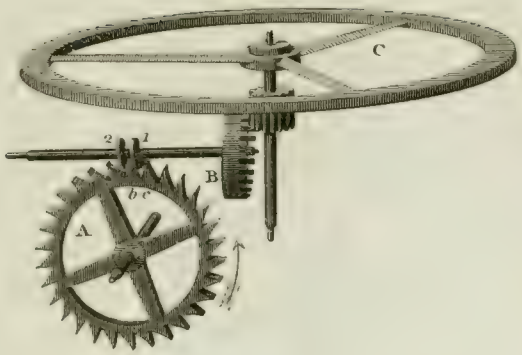

Fig. 2.
Graham's Horizontal.

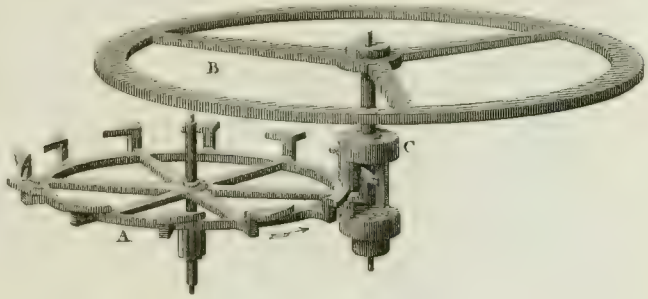

Fig. 3.
Anchor Escapement.

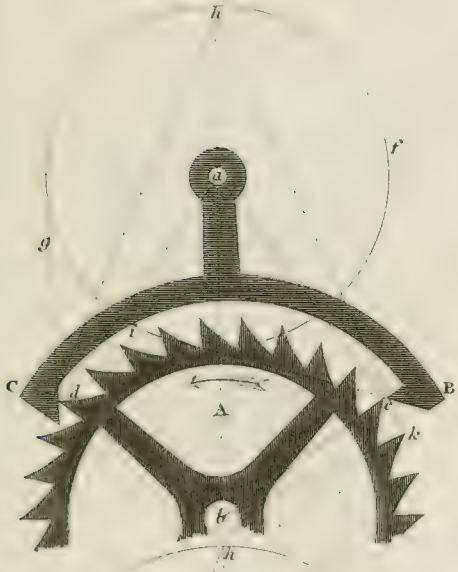

Fig. 5.

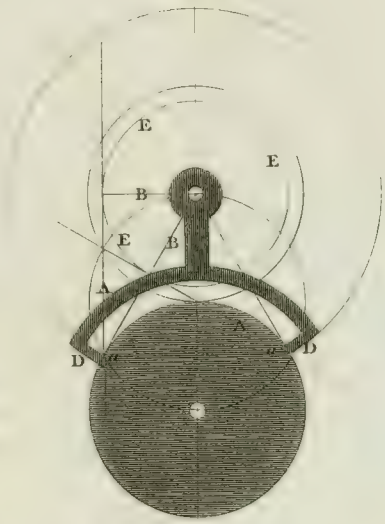

Fig. 7.
Bennet's Dead Beat.

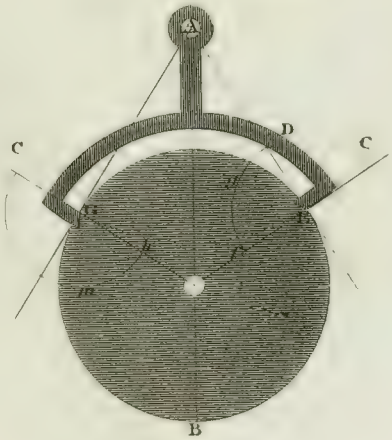

Fig. 6.
Grignon's Dead Beat.

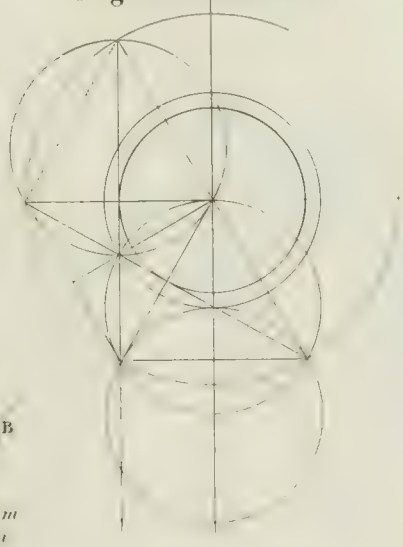

Fig. 4.
Graham's Dead Beat.

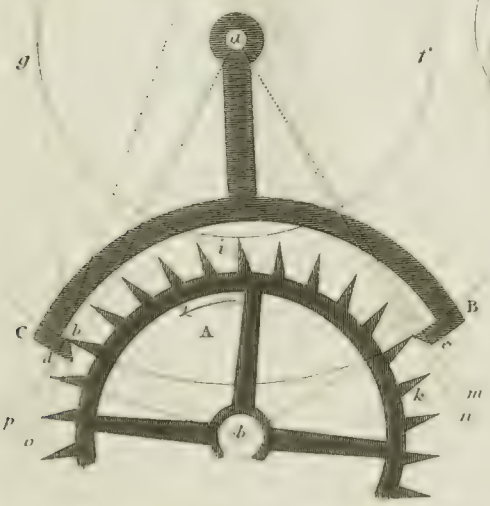

Fig. 8.
Thiout's.

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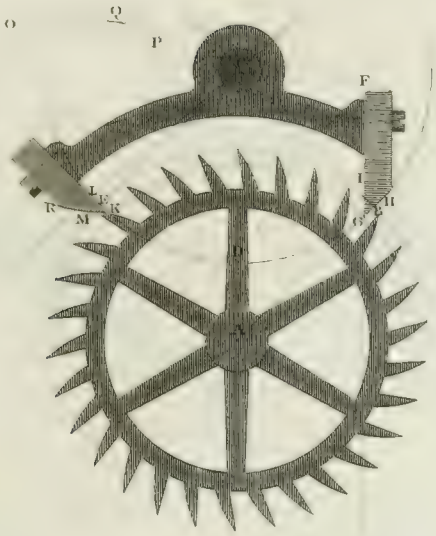
ESCAPEMENTS.

Berthoud's.

Fig. 1.

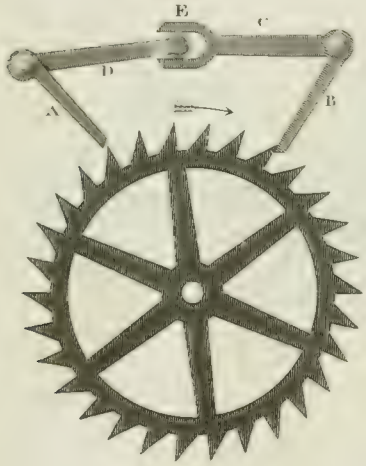
Smeaton's.

Fig. 2.



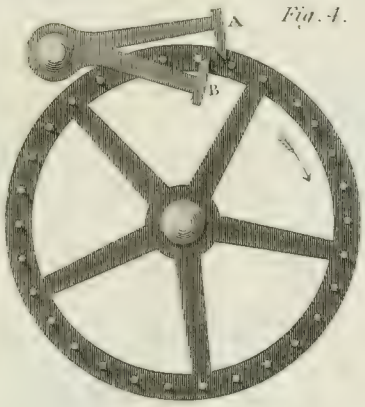
De Bethune's.

Fig. 3.



Amant's.

Fig. 4.



Harrison's.

Fig. 5.

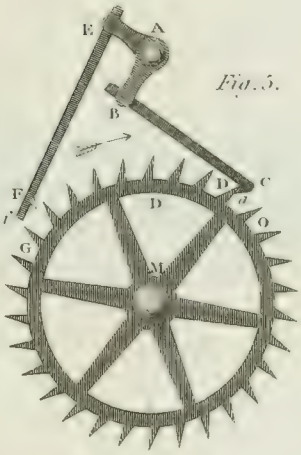
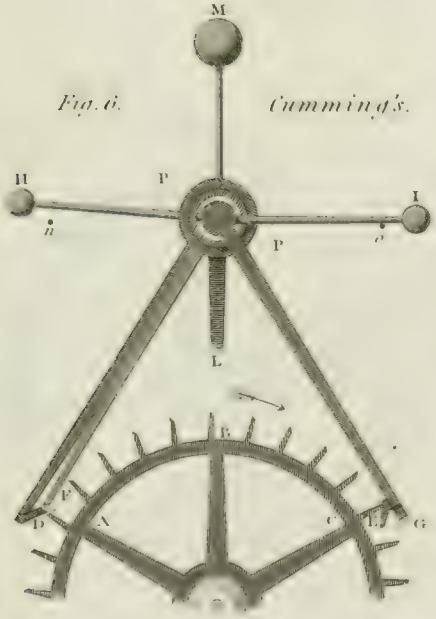
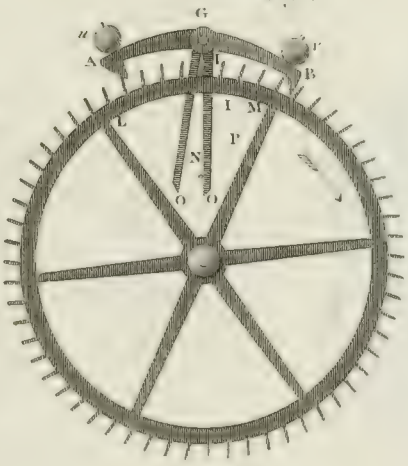


Fig. 6. *Cumming's.*



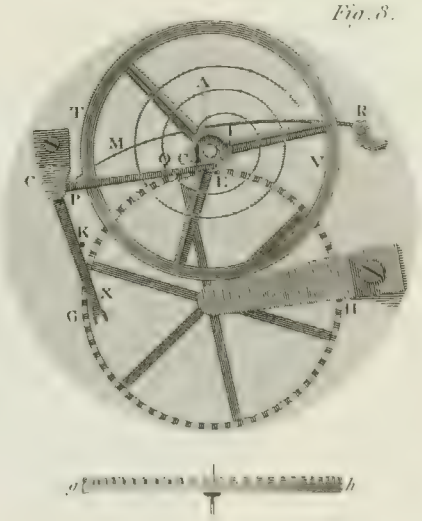
Mudge's.

Fig. 7.



Peter Le Roy's.

Fig. 8.



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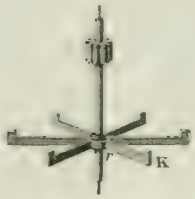
Lowry sculp.

HOROLOGY.

FRENCH ESCAPEMENTS for Chronometers.

Fig. 1.



Peter le Roy's Improved

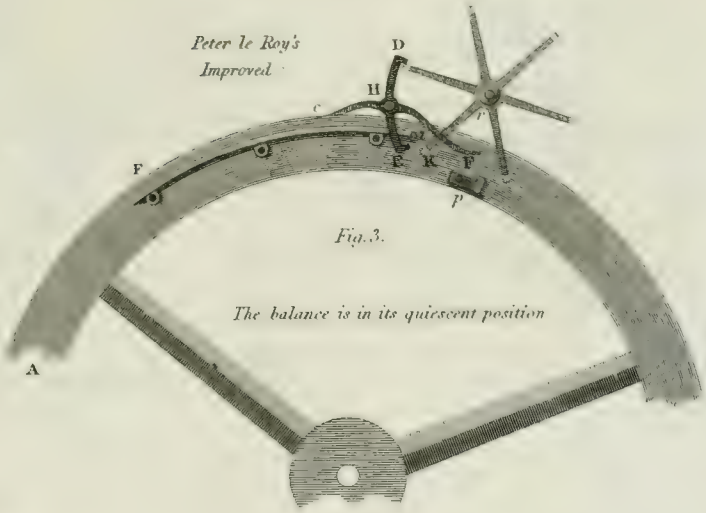


Fig. 3.

The balance is in its quiescent position

Fig. 2.

Berthoud's Detached

Fig. 4.

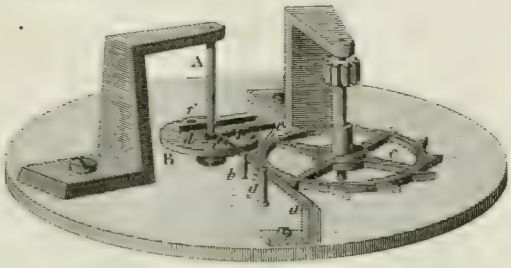


Fig. 6.

Berthoud's without a Spring

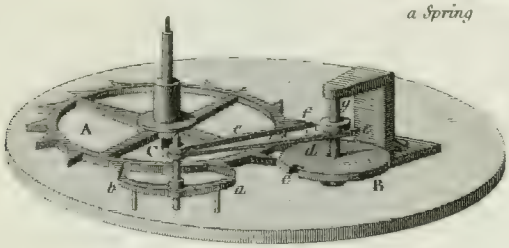
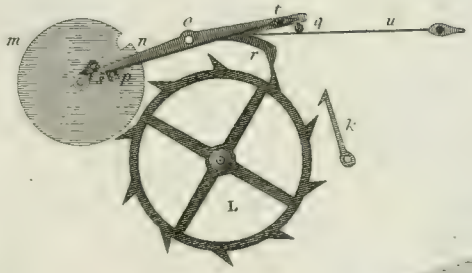


Fig. 5.

Berthoud's Improved No. 60.



Berthoud's with a Spring and Detent in No. 9.

Fig. 7.

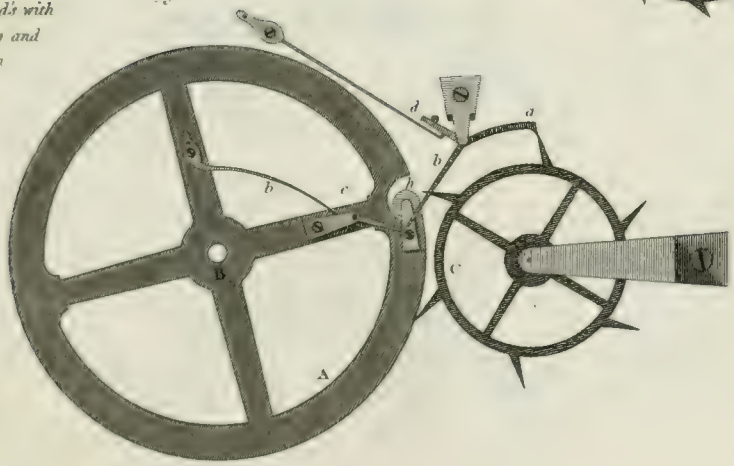


Fig. 8.

Berthoud's Isochronal

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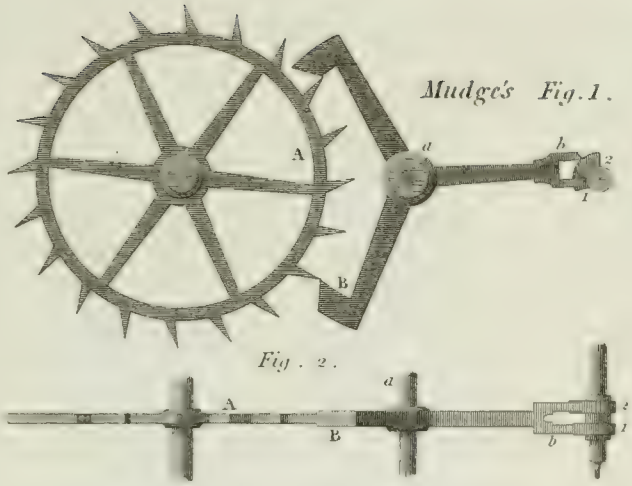
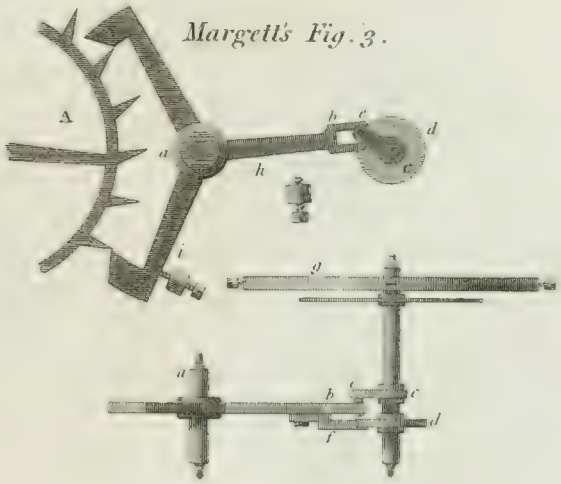
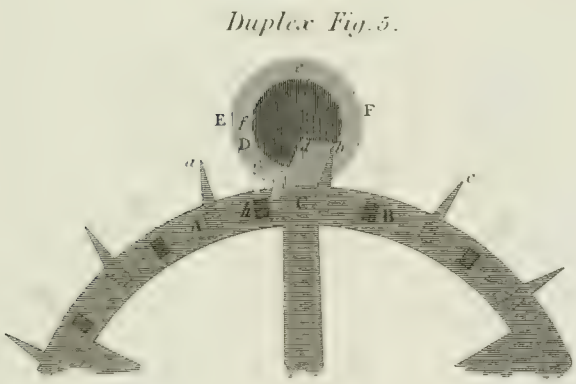
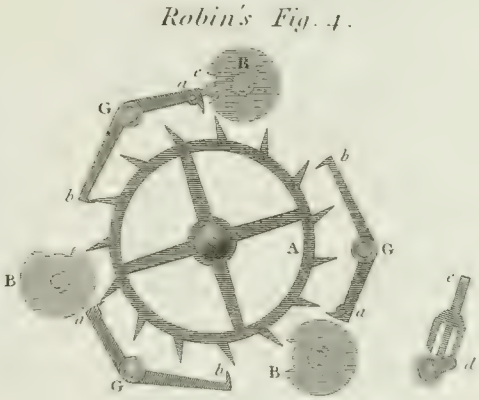
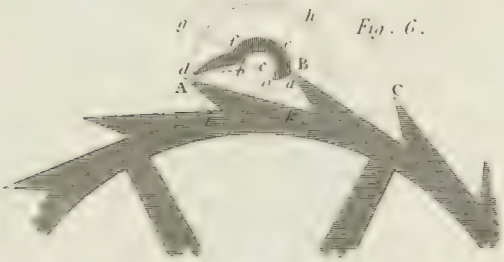
ESCAPEMENTS.

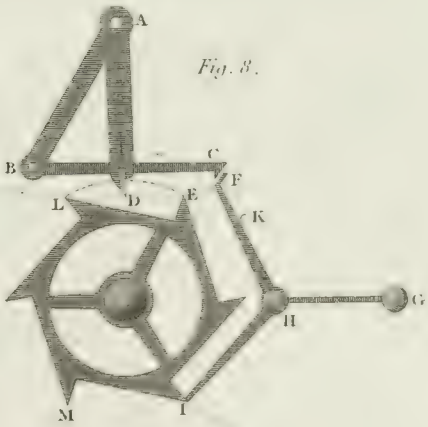












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ESCAPEMENTS &c.

Fig. 1.
Berthoud's.

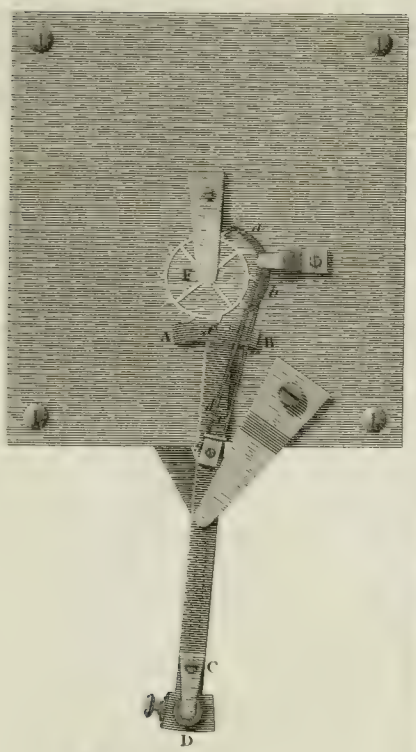


Fig. 2.
Nicholson's.

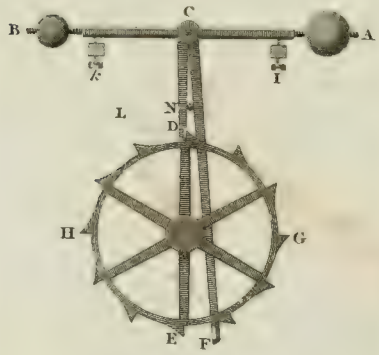


Fig. 5.
Mafsey's.

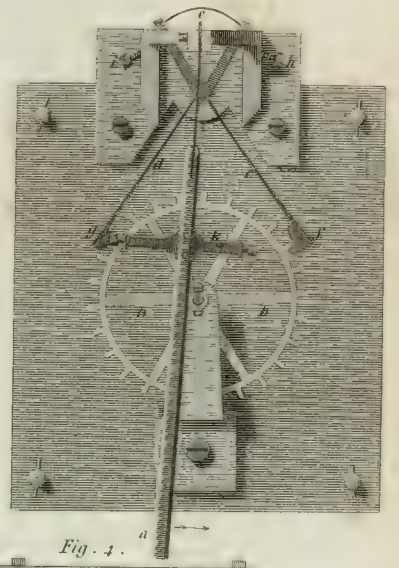


Fig. 3.
Goodriche's.

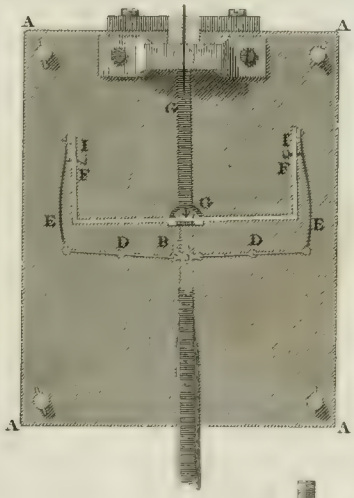


Fig. 4.

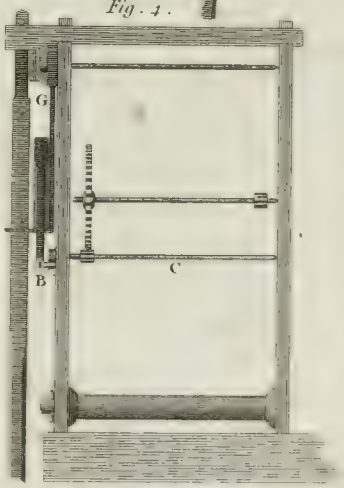


Fig. 6.

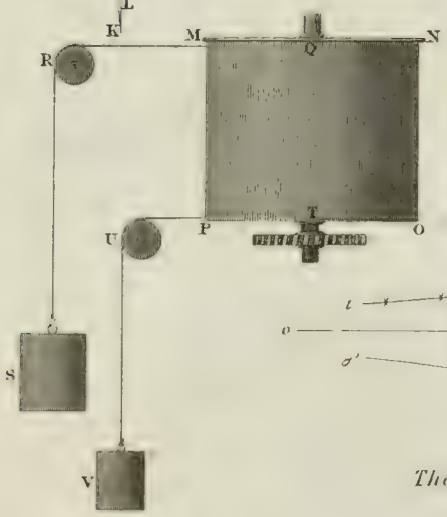
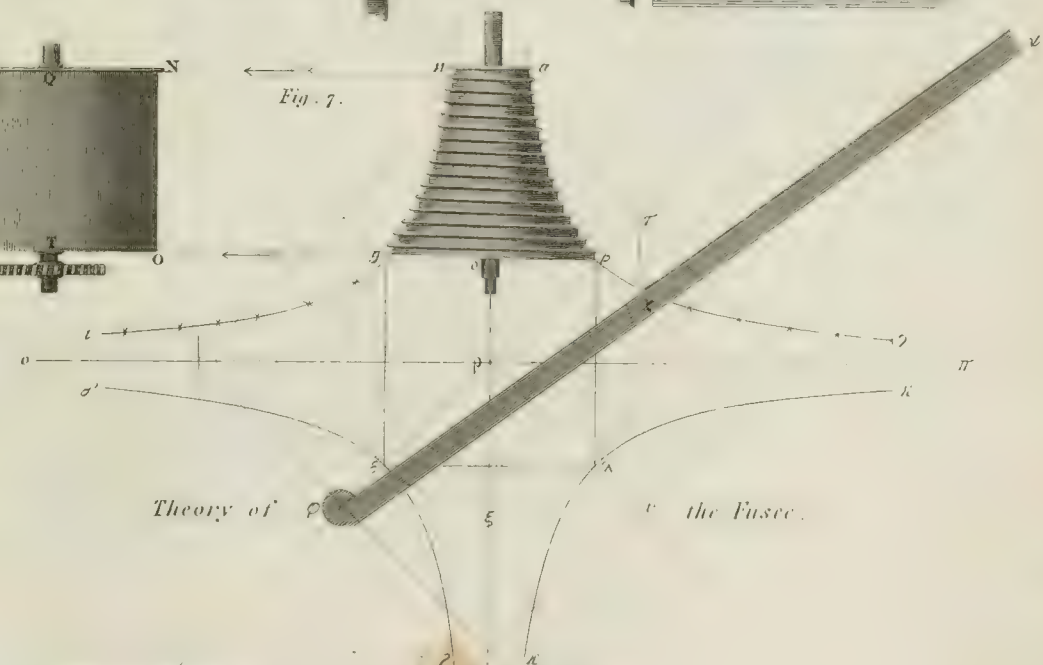


Fig. 7.



Theory of the Fusee.

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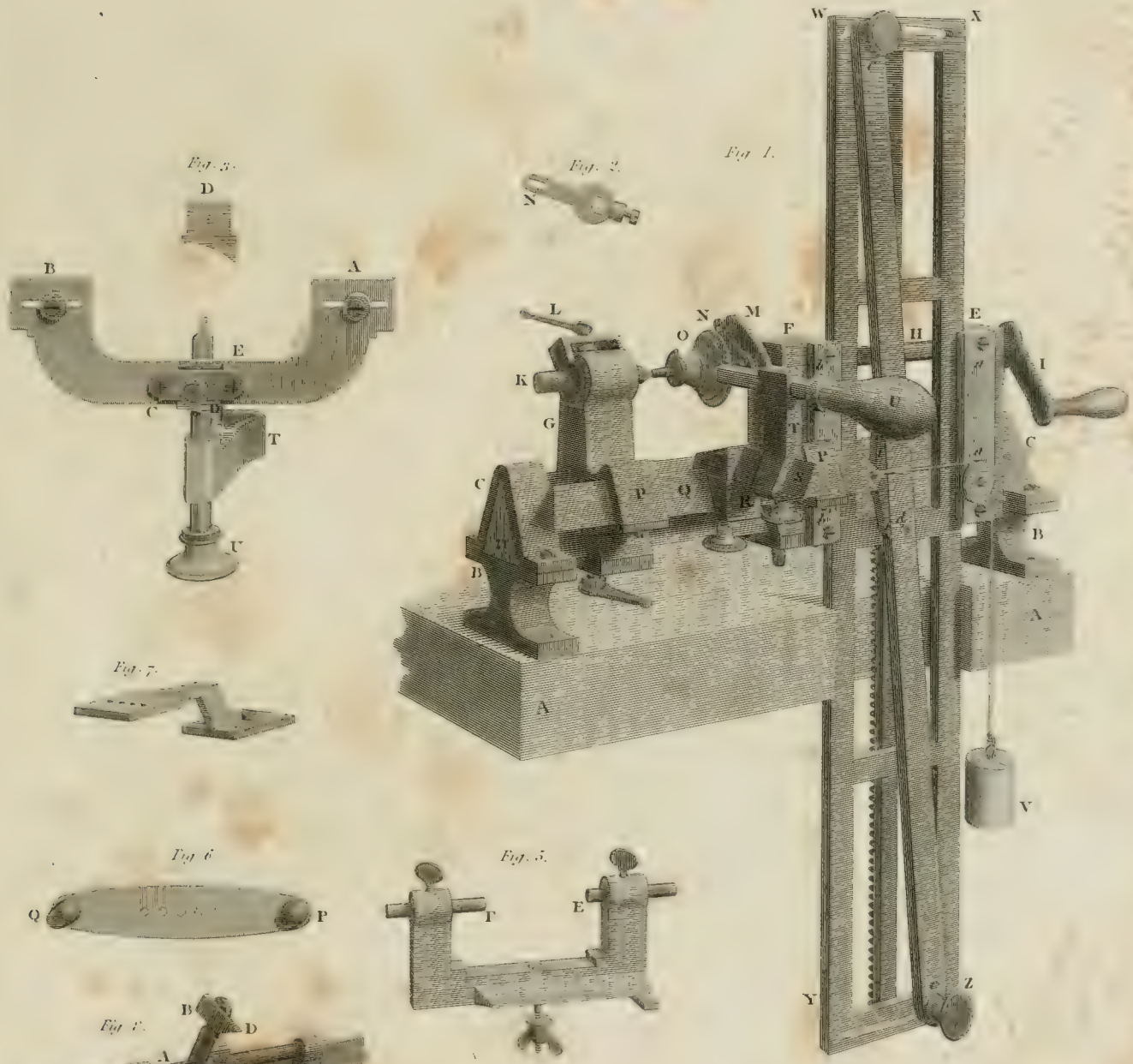
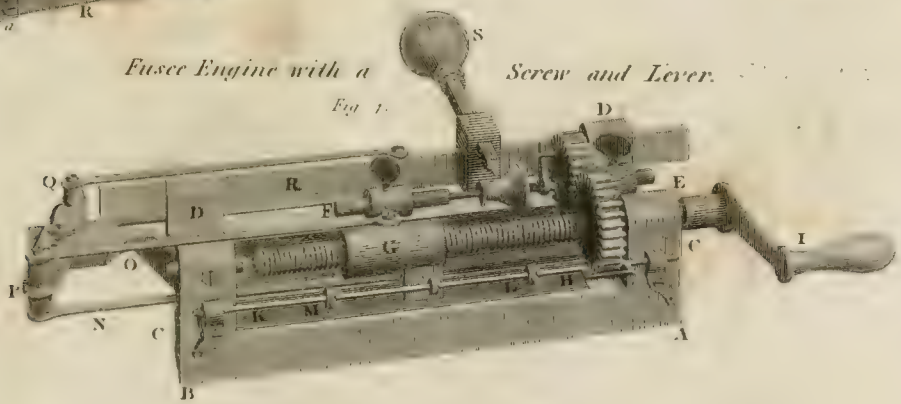
FUSEE ENGINE acting by an inclined Plane.



Fusee Engine with a Screw and Lever.



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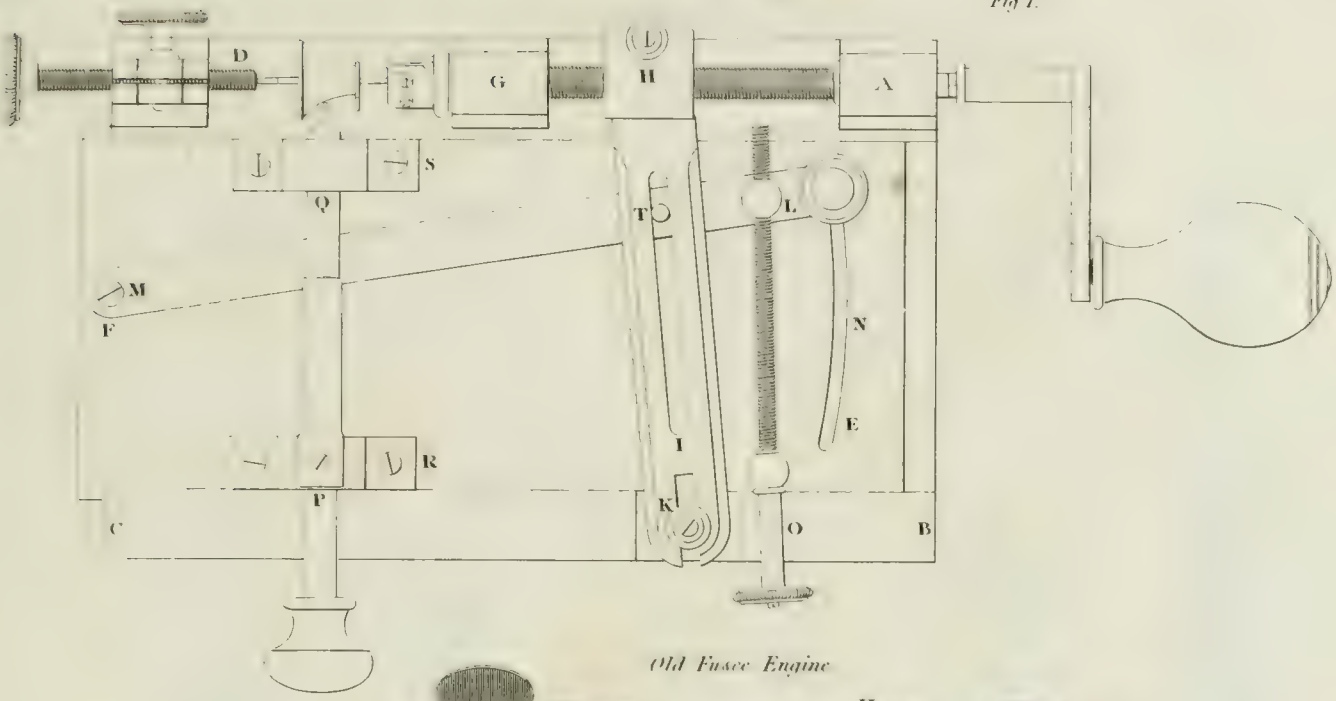
FUSEE ENGINES and FUSEE FRAME.

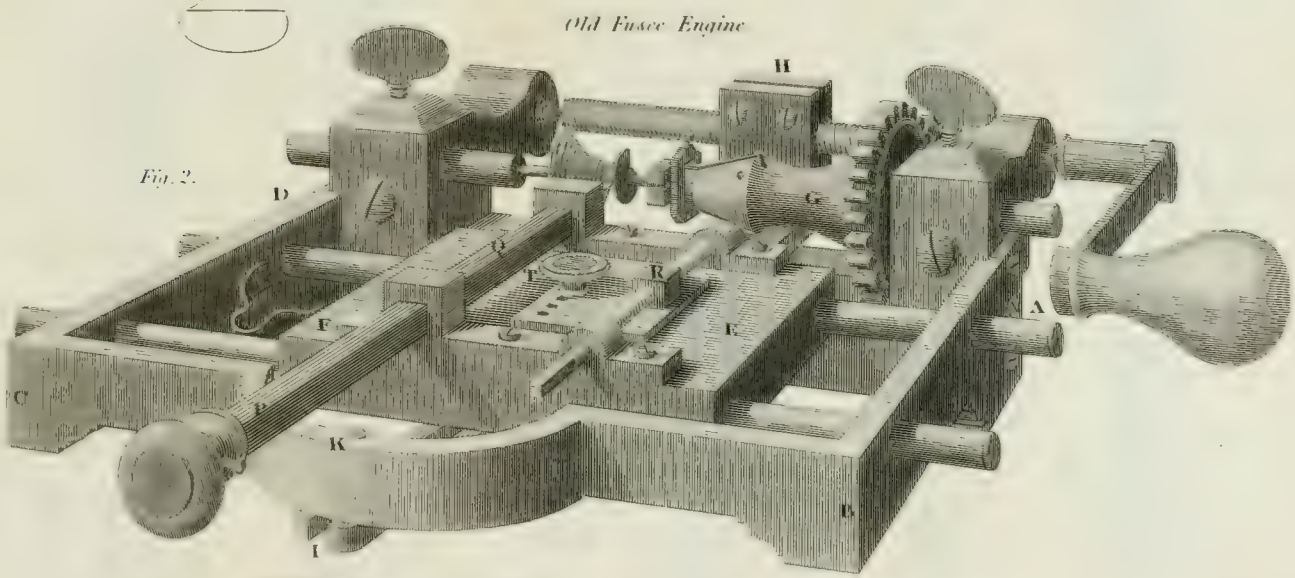
Common Fusee Engine

Fig. 1.



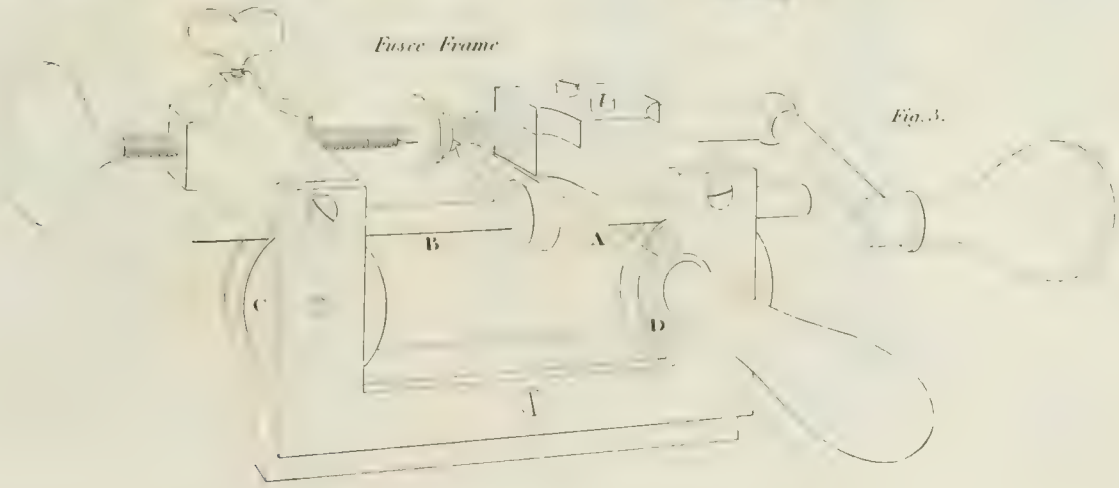
Old Fusee Engine

Fig. 2.

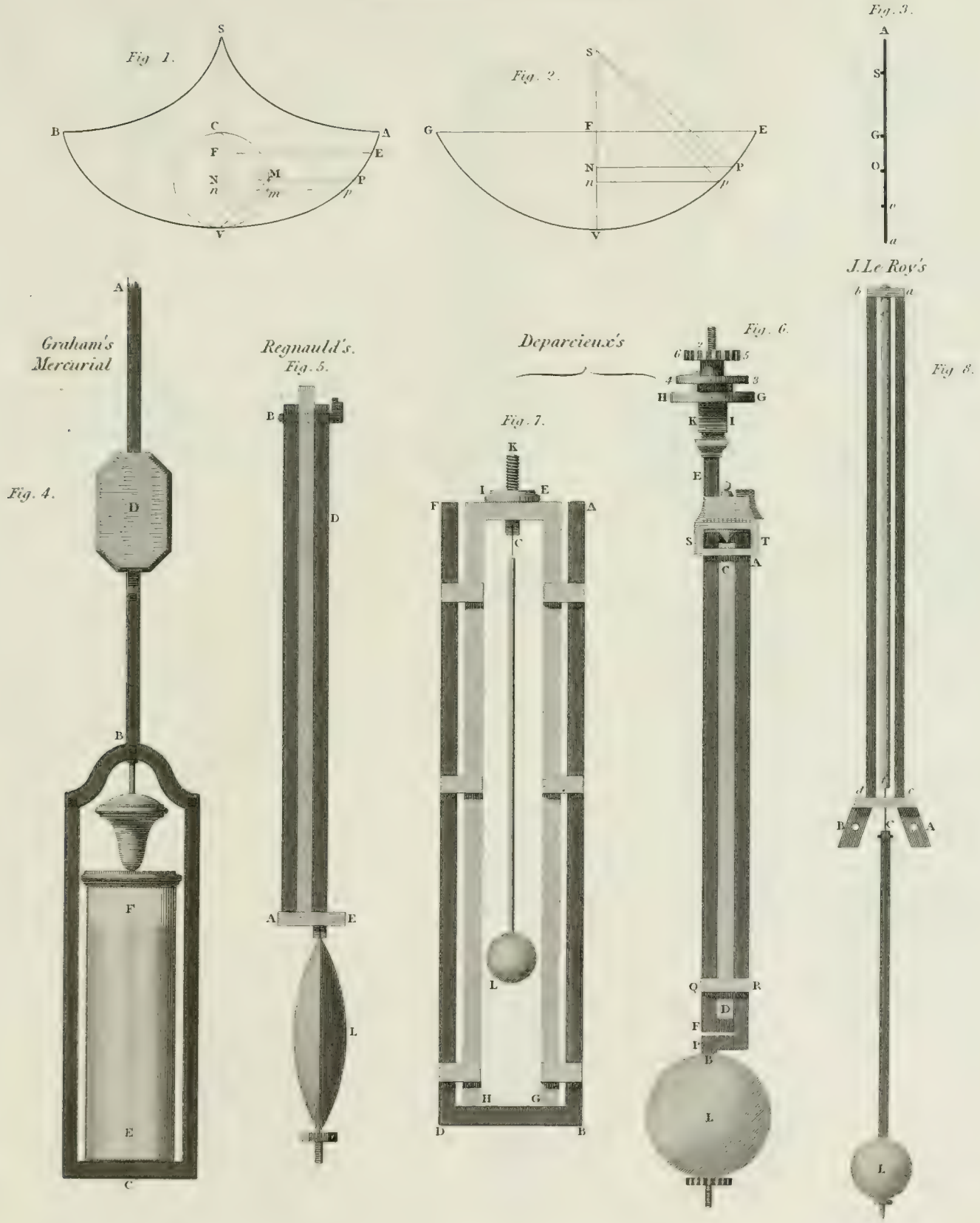


Fusee Frame

Fig. 3.



COMPENSATING PENDULUMS.



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HOROLOGY.

COMPENSATING PENDULUMS.

Ellicott's

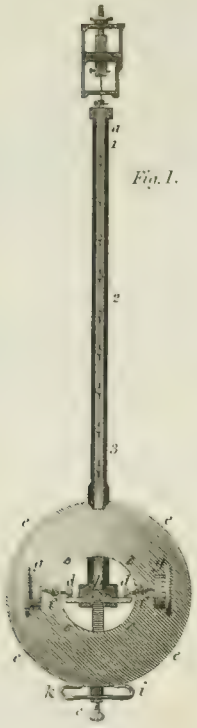


Fig. 1.

Troughton's Rhomboidal

Fig. 2.

Berthoud's

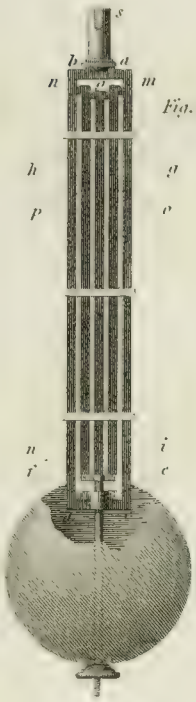


Fig. 3.

Troughton's Mercurial

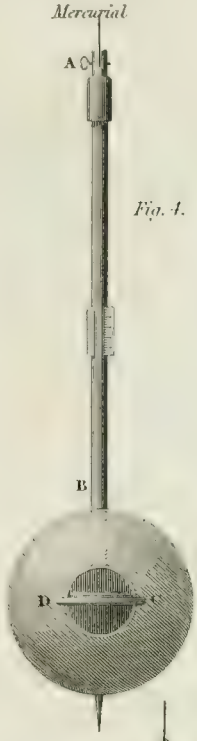


Fig. 4.

Dr. Fordyce's

Fig. 5.

Ritchie's

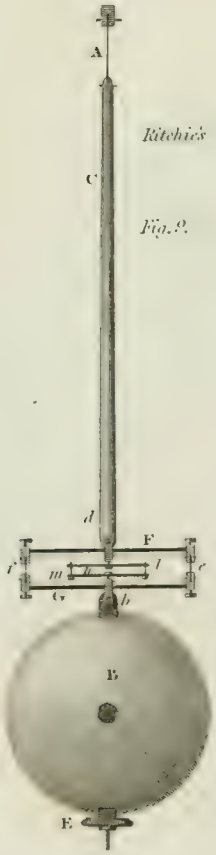


Fig. 9.

Ward's

Fig. 6.

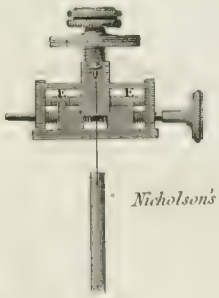
Reid's

Fig. 7.

Doughty's

Fig. 8.

Fig. 10.



Nicholson's

J. Farey Junr. delin.

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Lowry Sc.

REMONTOIR ESCAPEMENTS.

Fig. 1. Haley's.

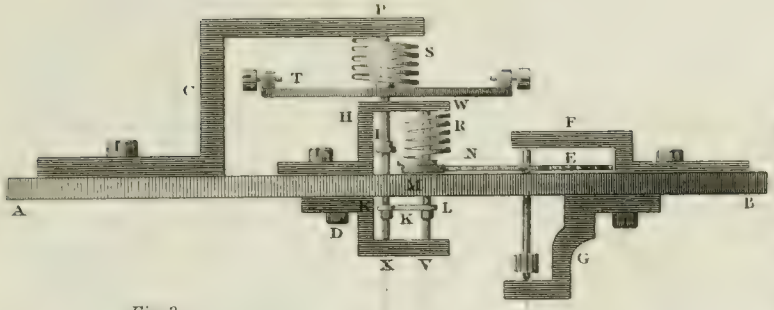


Fig. 3.

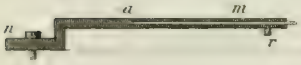


Fig. 2.

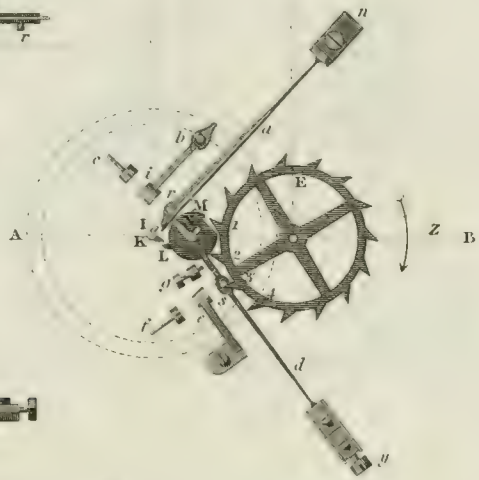


Fig. 4.

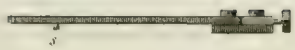


Fig. 6.

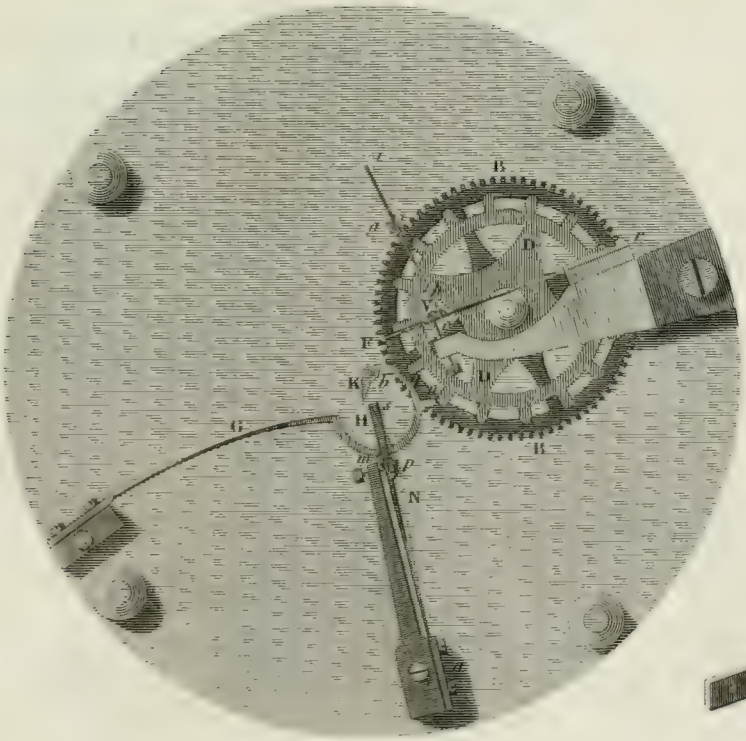
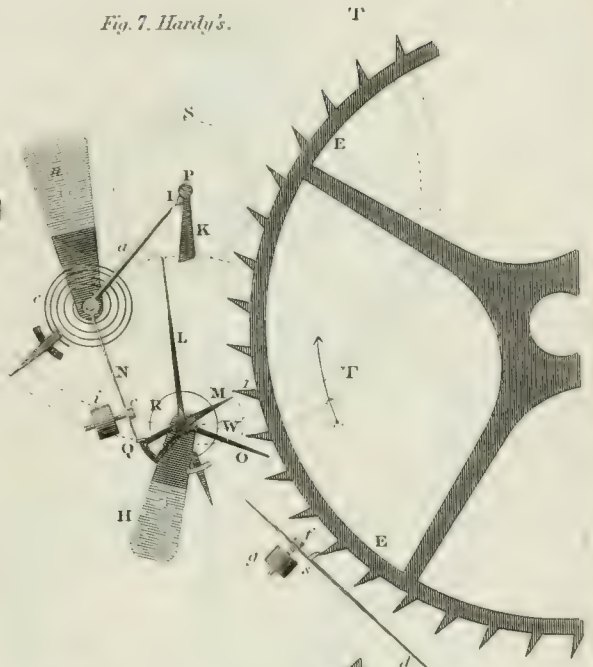
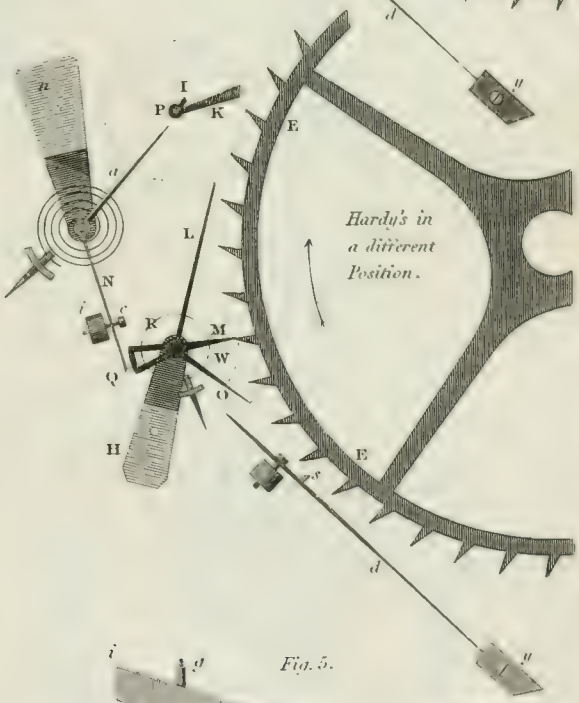


Fig. 7. Hardy's.





Hardy's in a different Position.

Fig. 5.

Breguet's

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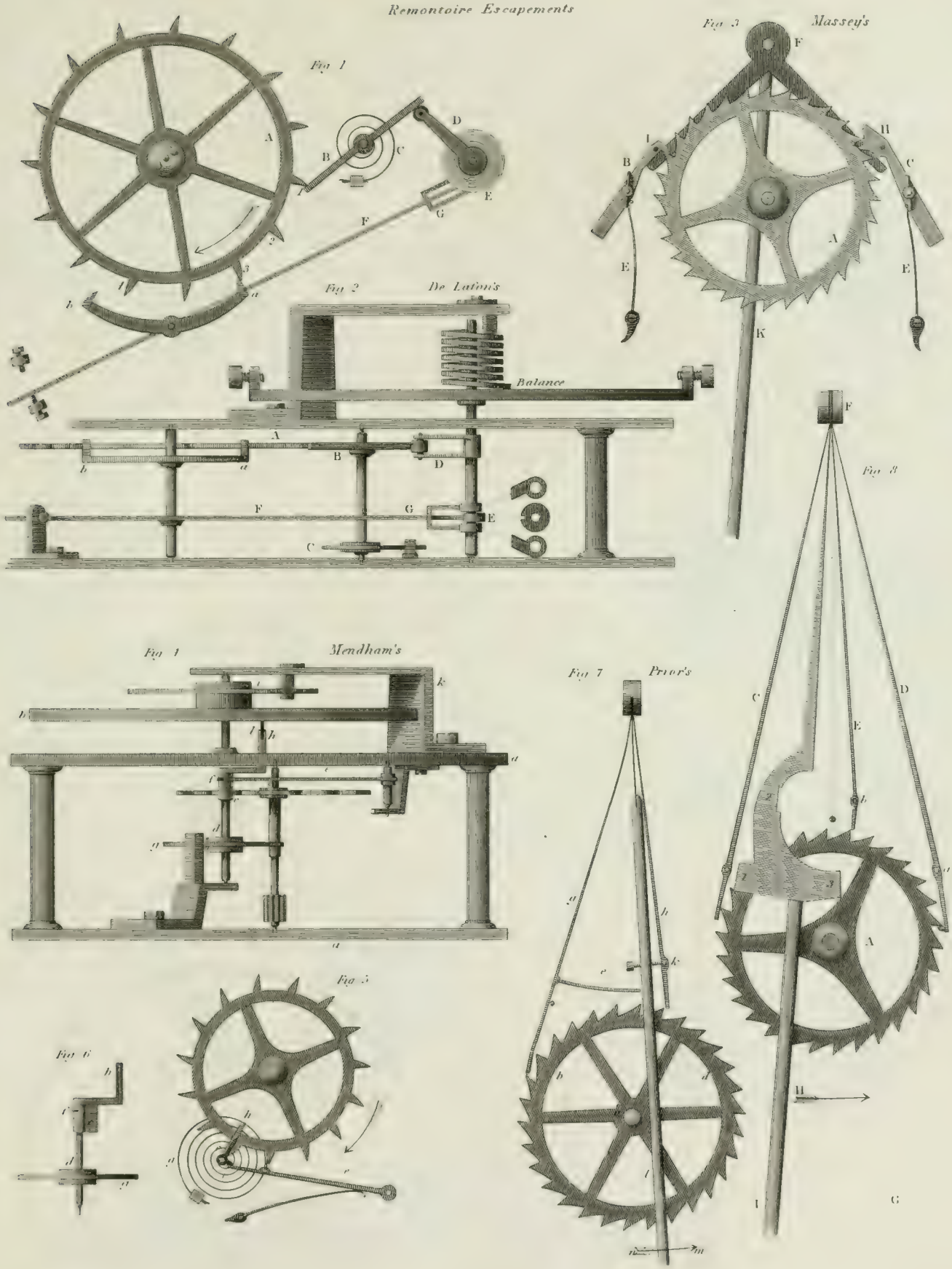
Remontoire Escapements



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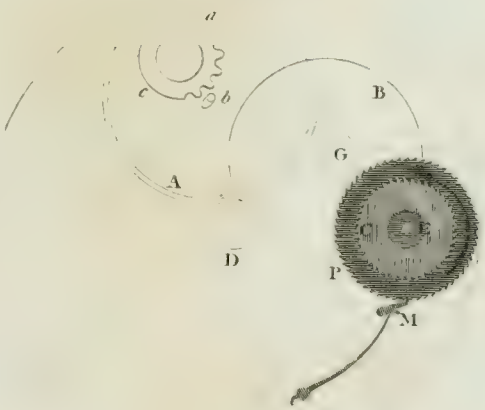
Recordon's Renovator.

Fig. 1

Fig. 3.

Fig. 2



WATCH with MUSIC.

Fig. 4.

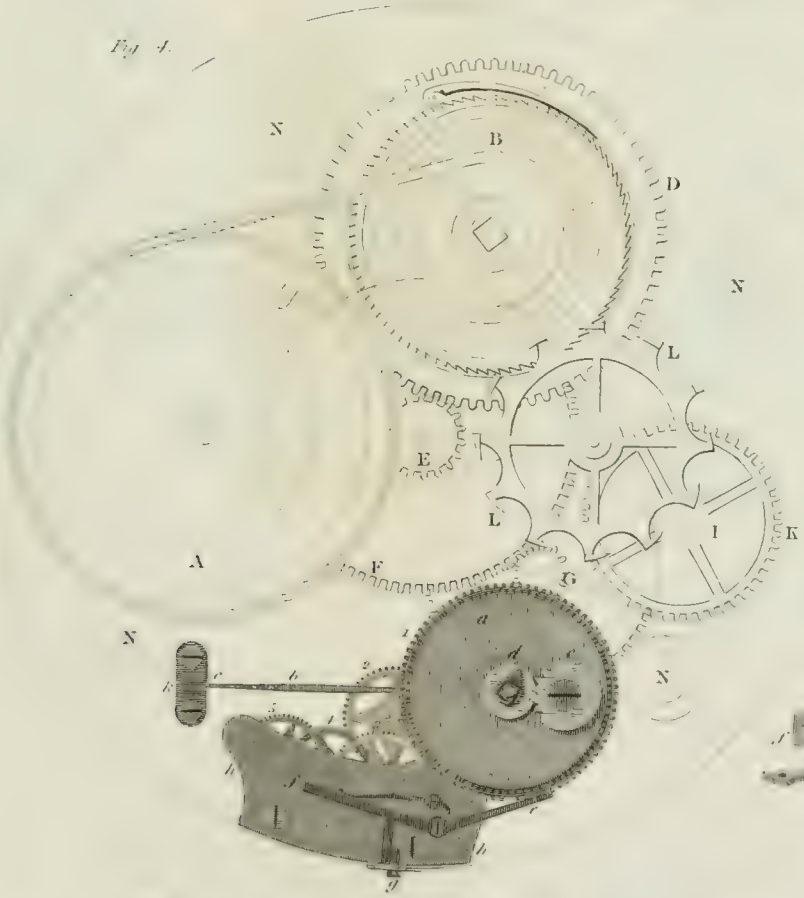


Fig. 7

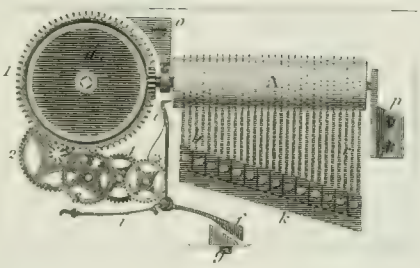


Fig. 8

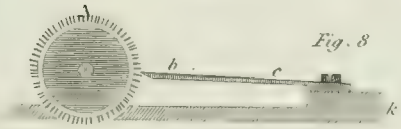


Fig. 9

Fig. 6

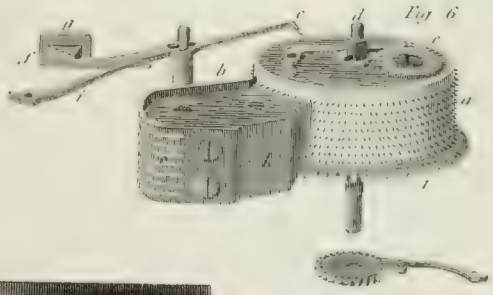
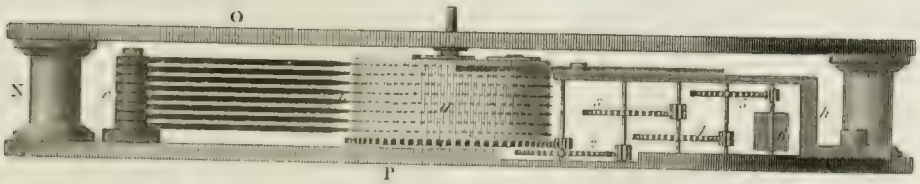


Fig. 5



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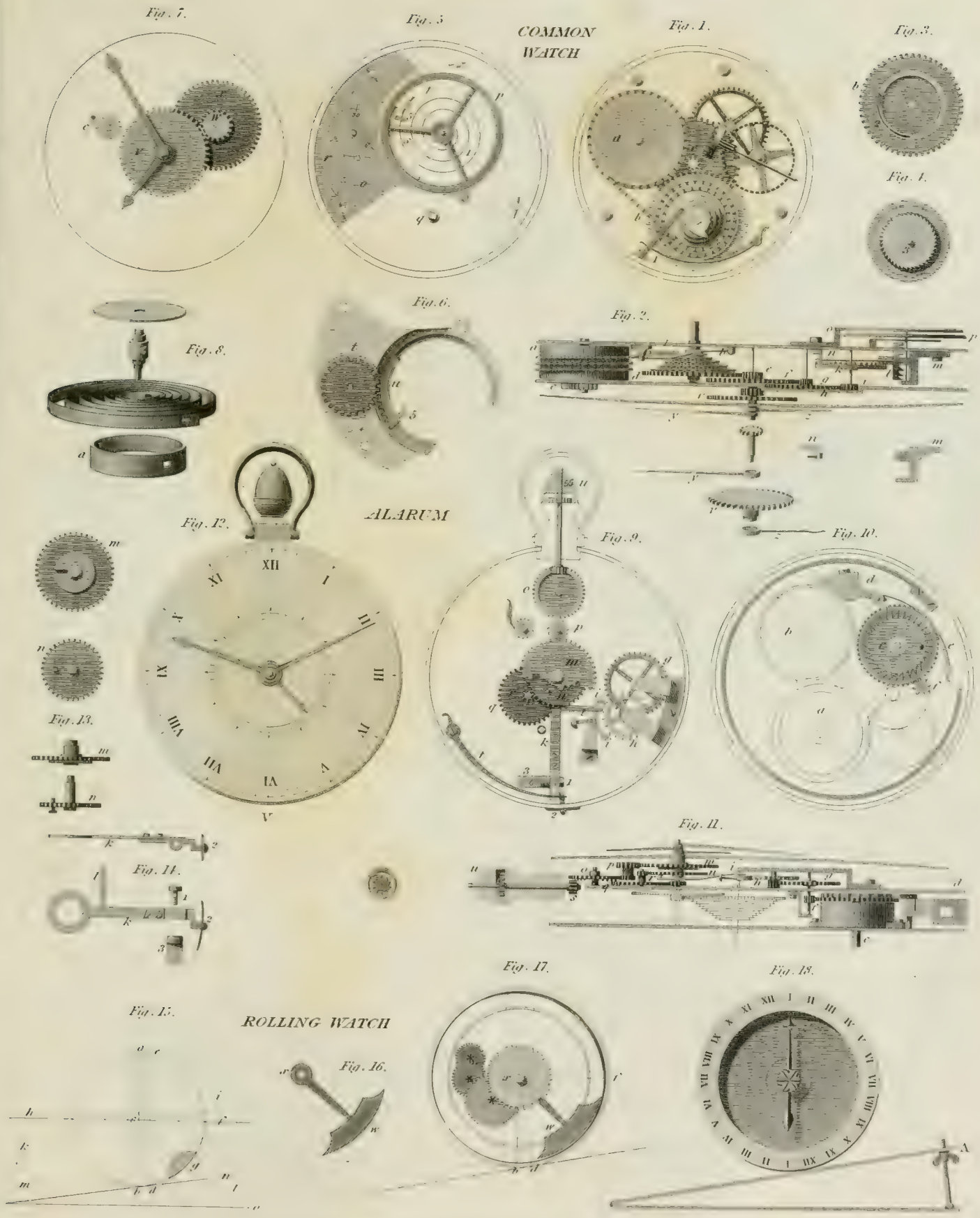

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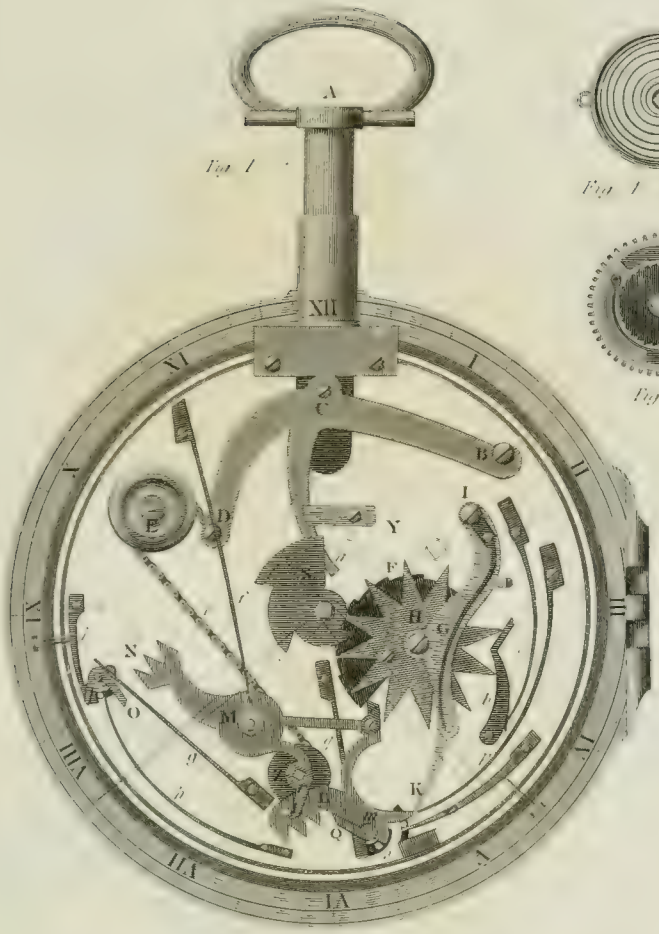
REPEATING WATCH.



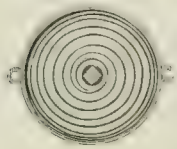


Fig. 4 Spring

Fig. 5

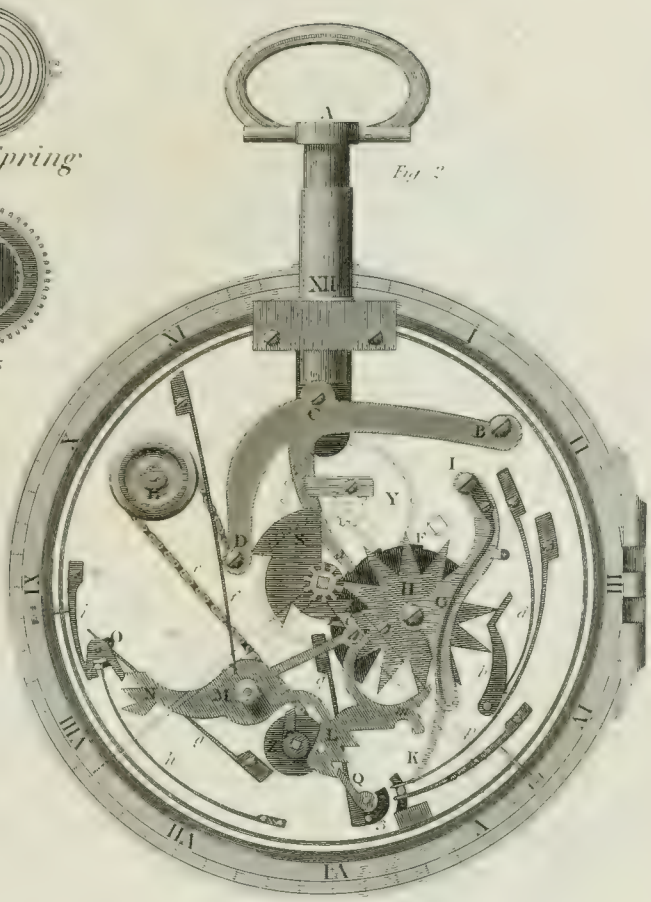
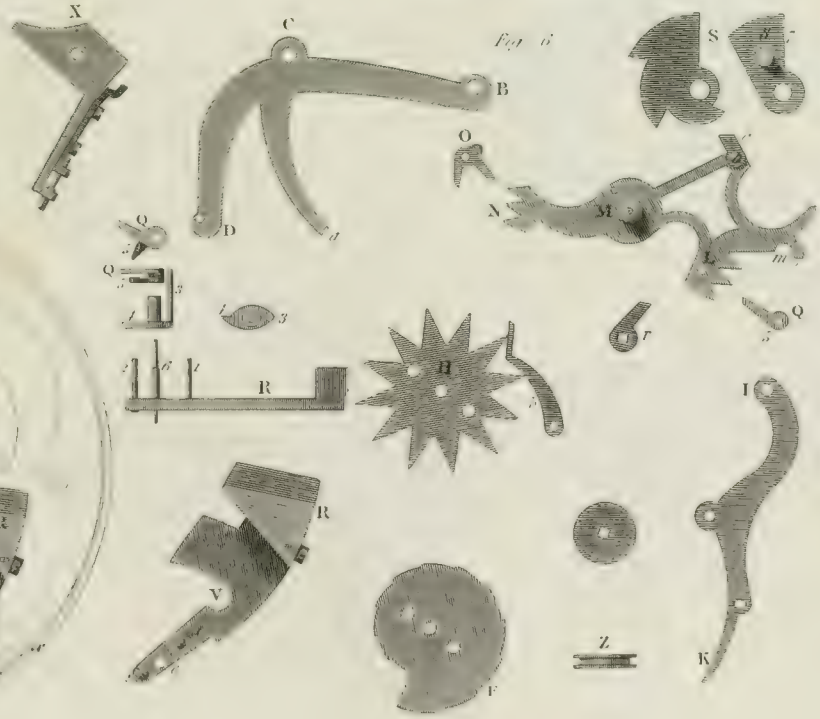


Fig. 3.
WHEELWORK



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REPEATING and ALARUM WATCHES.

Fig. 1.

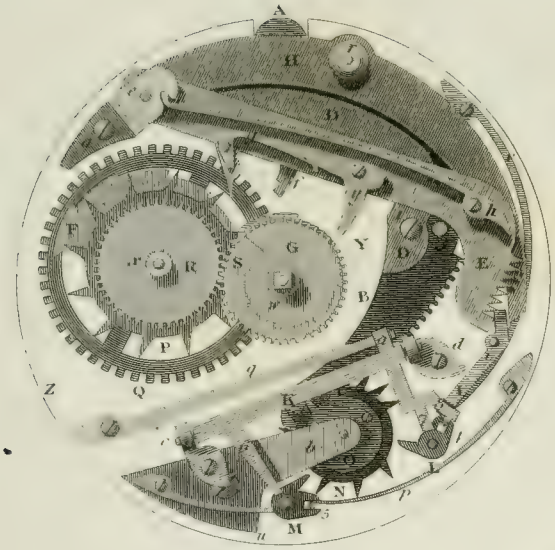
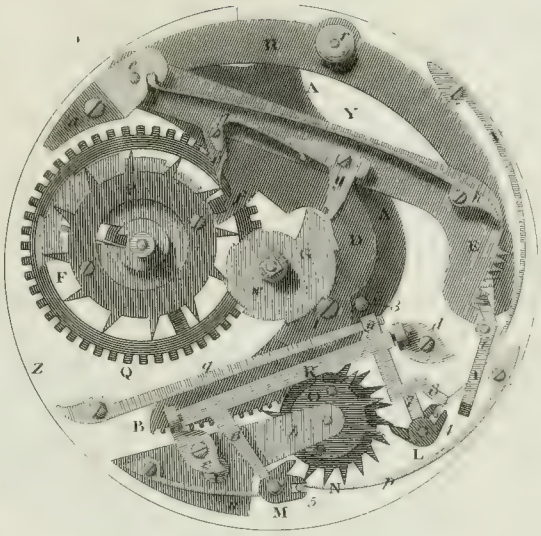


Fig. 5.

Fig. 2



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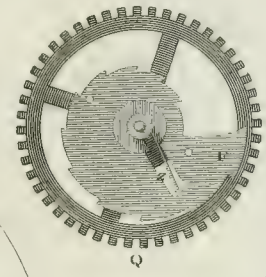

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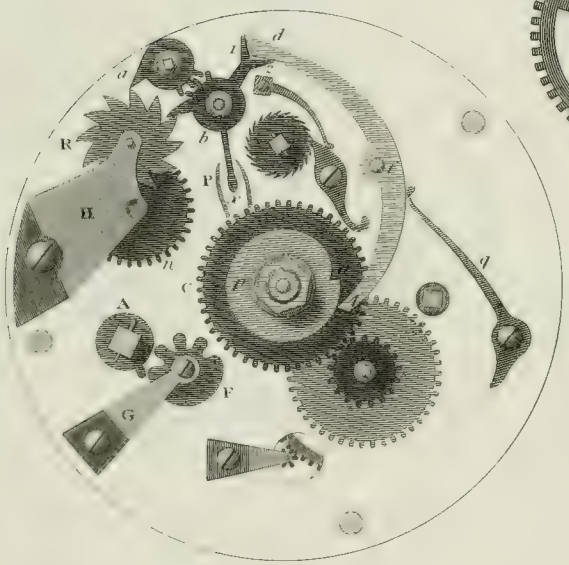


Fig. 3.

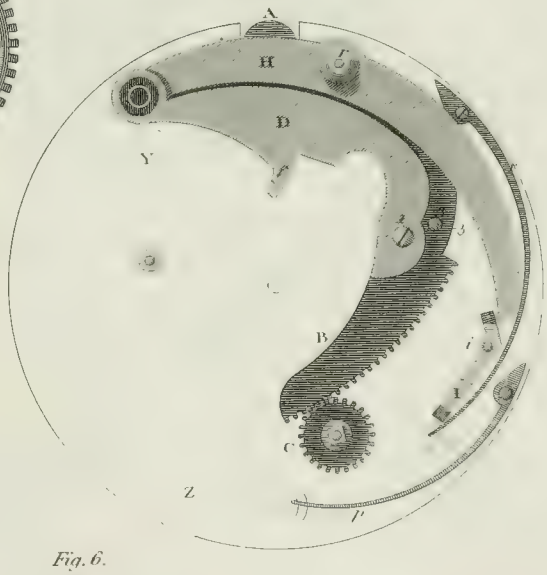
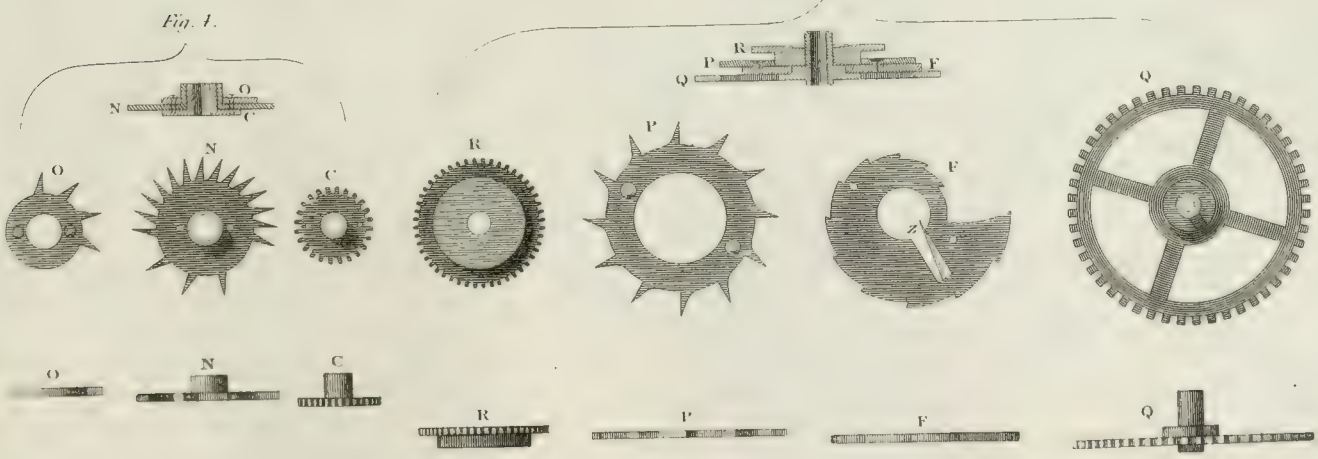


Fig. 6.

Fig. 4.



B. L. Vulliamy, Clock & Watch Maker, to the King, & Prince Regent, delnt.

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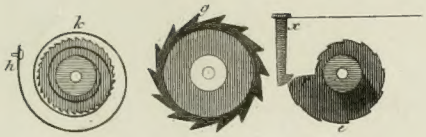
HOROLOGY.

REPEATING WATCHES.

Fig. 4.



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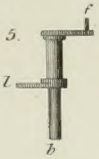

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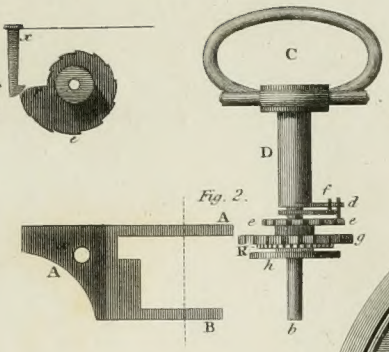


Mr. Elliot's

Fig. 1.

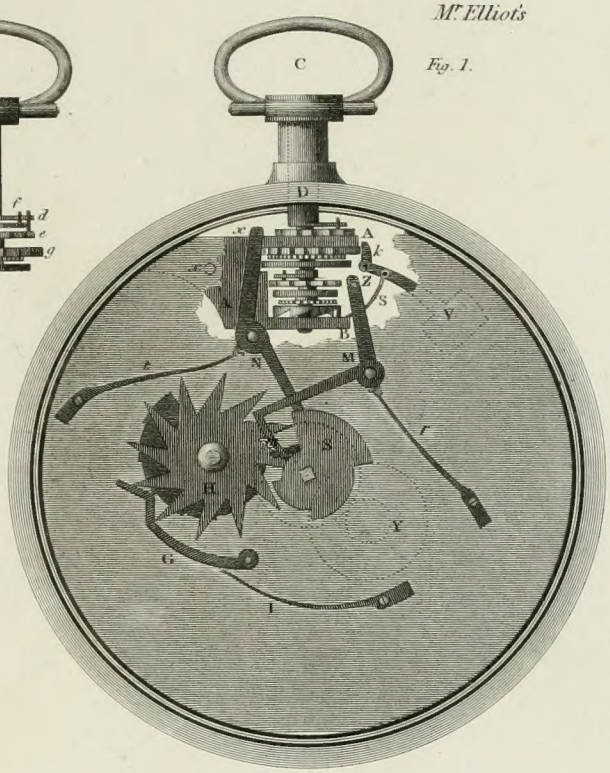
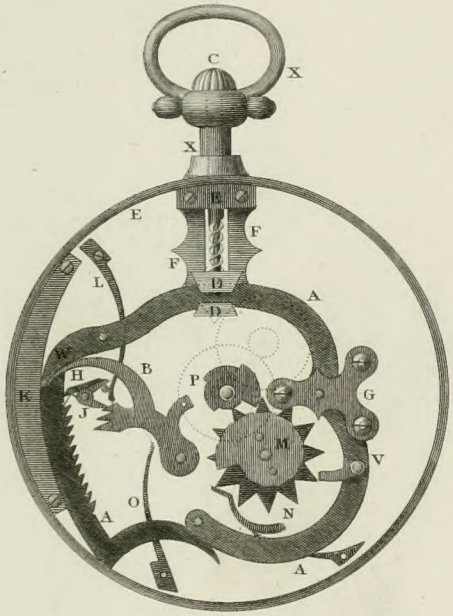


Fig. 3.

Infallible Repeater by M. Berrollas

Fig. 6.



Detached parts

Fig. 8.

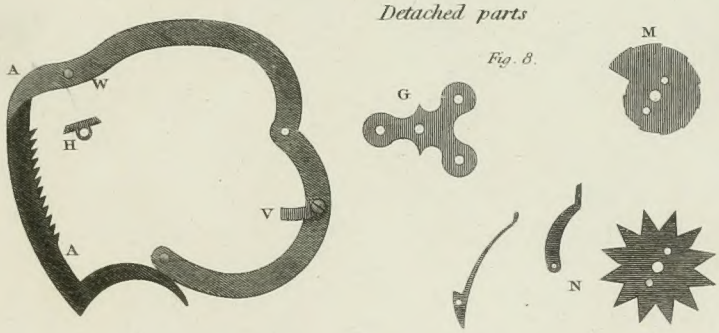
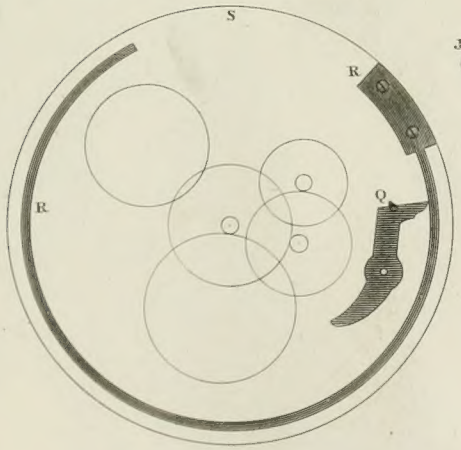
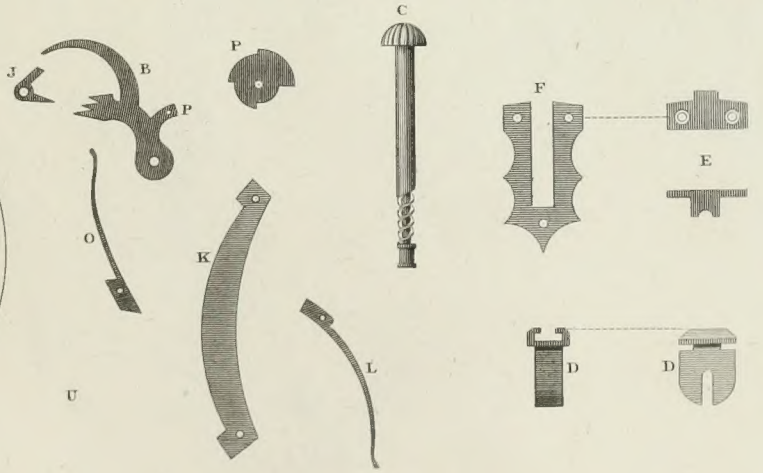


Fig. 7. Calliper





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